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Features of Optimally Motivating College Classrooms: Perspectives of Preservice Teachers

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FEATURES OF OPTIMALLY MOTIVATING COLLEGE CLASSROOMS:
PERSPECTIVES OF PRESERVICE TEACHERS

BY

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ABSTRACT

The primary objective of this mixed methods study was to explore the parameters of college students' perspectives on classroom learning environments. Specifically, the investigation sought to identify and describe the relevant features of the college classroom context that undergraduate students distinguished as promoting and supporting academic motivation at one four-year postsecondary institution. Secondarily, the study sought to examine the extent to which there was an association between the achievement goals students endorsed and their perspectives concerning the motivating features of the classroom learning environment. The nonprobability purposeful sample of undergraduate students consisted of 122 preservice teachers who were attending a small, private four-year East Coast university. A questionnaire containing 12 likert-type items and two open-ended questions was administered during the tenth and eleventh weeks of the Fall 2006 semester. Respondents' personally endorsed achievement goals were computed by scoring their responses to the likert-type items. Responses to the open-ended questions were coded and categorized to reveal the features of the classroom learning environment that preservice teachers viewed as having the greatest positive and negative influence on their level of academic motivation. A total of eleven thematic categories emerged from the inductive analysis of preservice teachers' responses to the two open-ended survey questions. Analysis of responses to the achievement goals measures revealed that preservice teachers pursued mastery-approach goals the most, followed by performance-approach goals, then followed by mastery-avoidance goals. Preservice teachers reported pursuing performance-avoidance goals the least. The series of Pearson chi-square

analyses undertaken to examine the association between preservice teachers' adopted achievement goals and their perspectives on the motivating features of the college classroom revealed that, with two exceptions, there were no significant relationships among these variables.

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DEDICATION

It is with much love and gratitude that I dedicate this dissertation to my parents, Hilda and Herb. Their devotion, support, and unwavering faith in my abilities to succeed have been instrumental in helping me to achieve this personal milestone. I thank them for being such a source of strength and encouragement.

When I am down and, oh my soul, so weary;

When troubles come and my heart burdened be;

Then, I am still and wait here in the silence,

Until you come and sit awhile with me.

You raise me up, so I can stand on mountains;

You raise me up, to walk on stormy seas;

I am strong, when I am on your shoulders;

You raise me up... To more than I can be.

Brendan Graham

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CHAPTER I

Introduction

Background

One of the persistent challenges American higher education faces is how to improve the quality of the student learning experience. Why do some students actually learn and develop an interest in the course material, while other students struggle to pass the course (Zusho & Pintrich, 2003; Harackiewicz, Tauer, Barron, & Elliot, 2002)? Are specific teaching and instructional approaches differentially effective for different types of students (Pascarella & Terenzini, 1991)? What sorts of issues do students focus on, or are aware of, when they are engaged in studying course content (Prosser & Trigwell, 1999)? Do the behaviors and attitudes of faculty create a cultural context for learning that encourages positive student perceptions of the classroom learning environment and adaptive student behaviors (Umbach & Wawrzynski, 2005)? These are some of the questions raised by researchers and theorists who have sought to bring meaning and coherence to the phenomenon of human learning.

Within the field of educational research, there has been an increased focus on the relational nature of learning. This perspective posits a chain of relationships linking concepts of learning, perceptions of teaching and learning, approaches to learning, and quality of learning outcomes (Biggs, 1978; Ramsden, 1992; Prosser, Trigwell, Hazel & Gallagher, 1994; Prosser & Trigwell, 1999). The relational perspective is best represented in the presage-process-product (3P) model of student learning (Biggs, 1978; Prosser et al., 1994). In general, the 3P model suggests that both student and teacher presage factors exist before the learning experience. These presage factors interact to

produce an approach to learning, which produces its characteristic outcome. The process phase suggests that a student's particular approach to learning is a function of both learner characteristics and the teaching factors. Finally, the product phase of the 3-P model suggests that study approaches are related to qualitative differences in learning outcomes. Most recently, Prosser and Trigwell (1999) have argued that in any act of teaching and learning, "prior experiences, perceptions, approaches, and outcomes are simultaneously present, although in some contexts, one or more of these aspects may be more to the foreground of awareness, while other aspects may be more to the background" (p. 14).

Studies based on the relational perspective highlight several key points that have direct implications for teaching and learning at the postsecondary level. For example, Marton and Saljo (1997) and their colleagues at the University of Gothenburg in Sweden found that qualitative differences in students' learning outcomes were closely associated with qualitative differences in students' approaches to learning. Marton and Saljo (1997), Ramsden (1992), and Prosser and Trigwell (1999) generated empirical evidence to further support the notion that students' awareness and perception of the learning environment is related to the approach to learning they adopt. Additionally, research has suggested "adjusting the context to afford changes in students' perceptions may be an important strategy in improving student learning" (Prosser & Trigwell, 1999, p. 4).

Similarly, researchers in the field of educational psychology and motivation now generally accept the view that a student's actions in a classroom are affected jointly by personal characteristics and contextual factors. A great deal of the educational psychology literature since the late 1990s has focused on the dynamic relationships

between motivation and context. This reflects the gradual shift from learning and motivation as rather separate fields of research, to a very integrated approach that now exists under the umbrella of the *contextual perspective* (Jarvela, 2001). A contextual view of motivated learning seeks to understand and describe how students' motivational beliefs interact with messages (cues) present in diverse social, physical, and instructional contexts (Jarvela, 2001). For example, in her reconceptualization of motivation in context, Boekaerts (2001) argues for studying motivation as a *situated construct*. According to Boekaerts, what students intend to do in the classroom and what they actually do to achieve these goals depends largely on how they appraise various learning situations and their contexts. In the *dynamic interactionist view* proposed by Lemos (2001), motivation is seen as an individual process that cannot be understood separately from the environment in which it emerges and develops. Behavior is viewed as being determined by reciprocal influences between the nature of the context and the individual's characteristics. Similarly, Volet's (2001a) *multi-dimensional* and *multi-level cognitive-situative perspective* on motivation in context highlights the significance of "mutual, reciprocal influences of individual affinities and situational affordances" (Jarvela, 2001, p. 7).

Goal orientation theory, one of the more prominent approaches to considering student motivation, provides a well-recognized framework for examining students' purposes for engaging in achievement behavior, their beliefs about the nature of competence, and their appraisals of the classroom context. Researchers have focused predominantly on two primary reasons why students engage in achievement behavior: to *develop competence* (mastery goal orientation) and to *demonstrate competence*

(performance goal orientation). Ames (1992) defined these goal constructs or orientations as an integrated pattern of beliefs that leads to “different ways of approaching, engaging in, and responding to achievement situations” (p.261). Personal goal orientations have been shown to influence a number of cognitive, affective, and behavioral outcomes.

Goal orientation theory also suggests that messages in the achievement situation create a *goal structure* (Ames, 1992; Maehr & Midgley, 1991) that makes certain goals salient. A mastery goal structure involves a perception that “students’ real learning and understanding, rather than rote memorization, are valued and that success is accompanied by effort and indicated by personal improvement” (Patrick, 2004, p.234). By contrast, a performance goal structure involves a perception that “learning is predominantly a means of achieving extrinsic rewards, and that success is indicated by outperforming others or surpassing normative standards” (Patrick, 2004, p.234). In general, empirical evidence supports the view that a classroom that emphasizes a mastery goal structure represents a particularly adaptive environment for students (Patrick, 2004; Ames, 1992; Ames & Archer, 1988).

In terms of the postsecondary context, many students would agree that education at the college and university levels remains highly competitive. “Students compete against one another for grades assigned on normative curves, for places in advanced seminars, for membership in elite honor societies, and for admission into selective graduate programs” (Harackiewicz, Barron, & Elliot, 1998, p. 1). On the one hand, the acquisition of knowledge is offered as the desired outcome of higher education. However, as Taras (2002) points out, “we often appear more concerned with grades than

we are with learning” (p. 508). Similarly, as Pollio and Beck (2000) observe, while formal and promotional college materials advocate that “the major purpose of higher education is to provide students with access to significant ideas, innovative technologies, and new ways of thinking...there is often a strong subtext emphasizing the significance of grades and grade point averages” (p. 84).

How do students interpret these contextual messages at the classroom level? Do students interpret their classroom experiences in terms of the knowledge they attain, the grades they receive, or some combination of the two (Pollio & Beck, 2000)? What instructor practices and classroom features do students actually notice and evaluate and, to what extent are these practices and features relevant to students’ academic motivation?

Research Objective

The primary objective of this study was to explore the parameters of college students’ perspectives on classroom learning environments. Specifically, the investigation sought to identify and describe the relevant features of the classroom context that undergraduate students distinguished as promoting and supporting academic motivation at one four-year institution. Secondarily, the study sought to examine the extent to which there was an association between the achievement goals students endorsed and their perspectives about the motivating features of the classroom learning environment.

Statement of the Problem

As educators we hope that our students will be engaged in their coursework and perform at high levels. However, according to the National Survey of Student Engagement (NSSE) Annual Report of 2005, more than four-fifths of students age 40 or

older said they were highly motivated to succeed, compared with only two-thirds of students age 19 or younger. And, although almost all (96%) first year students agreed at least slightly that people are able to develop their academic ability through hard work and practice, close to one-third (30%) did just enough work to get by (NSSE, 2005). In fact, more recent data indicates that the average first year student spends about 14 hours per week preparing for class, which is far below what faculty members say is necessary to do well in their classes (NSSE, 2006).

What goals drive college students' academic pursuits? The literature on postsecondary education suggests that college students often pursue multiple goals in their classes. Some goals may be fairly general and concern students' reasons for taking a class, whereas other goals are more specific to what students hope to accomplish in their course or their purposes for engaging in achievement behavior (e.g., to learn as much as possible about a subject or to obtain a high grade)(Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). As stated earlier, these latter types of goals have been labeled *achievement goals* (Dweck & Leggett, 1988; Ames, 1992; Nicholls, 1984; Maehr & Midgley, 1991). Students' achievement goals, or goal orientations, can influence how they approach, experience, and perform in their courses. There is considerable empirical evidence linking students' personally endorsed achievement goals to a number of learning related outcomes. These include cognitive engagement (Dupeyrat & Marine, 2005), study strategies (Al-Emadi, 2004), intrinsic interest (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, & Elliot, 1998), coping style (Morris, Brooks, & May, 2003), and surface processing (Al-Emadi, 2004). Other learning related outcomes include delay of gratification (Bembenutty, 1999), self-efficacy (Bong, 2004),

competence valuation (Church, Elliot, & Gable, 2001), persistence (Elliot, McGregor, & Gable, 1999), and graded performance (Barron & Harackiewicz, 2003; Elliot & Church, 1997; Church, Elliot, & Gable, 2001).

Research has also established that the goal structure of the learning environment can influence students' personal goal orientations as well as other learning related behaviors (see Karabenick, 2004; Barron & Harackiewicz, 2001, 2003; Church, Elliot, & Gable, 2001). Current conceptualizations of classroom goal structures are based largely on theory and findings from experimental manipulations in laboratory settings and research conducted in actual classrooms or schools that have relied primarily on survey methodology (Urdu, 2001). Ames (1992) synthesized much of the experimental research into a coherent framework that incorporated teaching principles and strategies thought to influence achievement motivation. The framework includes six categories: task design, distribution of authority, recognition of students, grouping arrangements, evaluation practices, and time allocation (TARGET) (see also Epstein, 1989). The TARGET framework has been very influential in terms of contributing to the way researchers conceptualize a mastery goal structure.

Several studies at the postsecondary level have used elements of the TARGET structure to frame their investigations. For example Church, Elliot, and Gable (2001) examined the relationship between three perceived classroom variables – lecture engagement, evaluation focus, and harsh evaluation – and college students' achievement goal adoption. Findings indicated that lecture engagement was a positive predictor of mastery goal adoption, but had no influence on the adoption of performance-approach or performance-avoidance goals. Evaluation focus, on the other hand, was a positive

predictor of both performance-approach and performance-avoidance goals, and a negative predictor of mastery goals. Harsh evaluation was a positive predictor of performance-avoidance goals, a negative predictor of mastery goals, and was unrelated to performance-approach goals.

Barron and Harackiewicz (2003) looked at the unique effects of four perceived classroom climate measures (task, authority, evaluation, recognition) on students' adoption of achievement goals, end-of-semester interest, and course grades. The researchers found that students' perceptions of a mastery classroom climate were positively linked to end-of-semester interest, but had no effect on final course grades. Alternatively, Barron and Harackiewicz found that perceptions of a performance classroom climate were negatively linked to interest, and had no effect on grades.

Senko and Harackiewicz (2005) explored the extent to which college students regulated their achievement goals in response to competence feedback (i.e. evaluation). The researchers found that students appeared to switch back and forth between performance-approach and performance-avoidance goals after receiving feedback from an early set of exams. Poor exam performance predicted a significant decrease in mastery goal and performance-approach goal pursuit and an increase in performance-avoidance goal pursuit.

Classroom learning environment research has established that other aspects of the classroom context can influence students' learning related behaviors. In this regard, Juvonen and Wentzel (1996) focused on the fact that interpersonal relationships represent contexts that can lead to engagement in or alienation from classroom activities. Hirschy and Wilson (2002) suggested that consideration of how social factors affect the teaching

and learning exchange between college faculty and students and among peers in the classroom enables educators to address structural inequities and promote situations conducive to learning for students of varying backgrounds. Similarly, Cabrera, Colbeck and Terenzini (2001) found that instructor interaction, instructor feedback, and collaborative learning opportunities predicted gains in academic achievement among undergraduate engineering students. Pulvers and Diekhoff (1999) revealed that perceptions of various psychosocial dimensions of the classroom environment were related to the tendency to neutralize or justify cheating among college undergraduates.

More recently, some goal theorists have begun to re-examine theories and empirical evidence regarding motivating classrooms and have suggested that the social context of the classroom has a greater role in promoting and supporting student motivation than tends to be acknowledged in current goal orientation theory (see Patrick, 2004; Turner, Midgley, Meyer, Gheen Anderman, Kang, & Patrick, 2002; Patrick & Ryan, 2003; Wentzel & Wigfield, 1998; Juvonen & Wentzel, 1996). Patrick (2004) and Patrick and Ryan (2003) have posited that there are aspects of the elementary and middle school classroom environments, in addition to those that focus on the meaning of engaging in academic tasks, which might be associated with a mastery goal structure. These features include perceptions of support and respect, interaction patterns, and participation opportunities. Similarly, research conducted by Turner et al. (2002) has provided supporting evidence that the conceptualization of a mastery goal structure may need to be expanded to include dimensions of the classroom's social environment. These views are consistent with Blumenfeld's (1992) argument that goal theorists need to pay greater attention to complementary theoretical perspectives when conducting research

aimed at advancing our understanding of optimally motivating classrooms. Ultimately, as Volet (2001a) has stated, "...neither motivational traits, nor cognitive constructions of motivation, nor qualitative features of tasks and context are sufficient on their own to understand the complex, multidimensional and interactive nature of motivation and engagement in learning" (p. 323).

In light of the above comments, there appeared to be a need for research on motivation at the postsecondary classroom level to revisit and perhaps move beyond the TARGET framework. College campuses and individual classrooms are inherently social places where students go about their studies in the presence of many peers and adults. Whereas instruments such as the National Survey of Student Engagement assess students' overall perceptions of the extent to which an institution provides academic and social support and encourages various social interaction patterns, these areas remain under-investigated at the classroom level. In addition, although the various scales that have been constructed to measure student perceptions of classroom goal structures (see Midgley et al., 1998; Barron & Harackiewicz, 2003; Church, Elliot, & Gable, 2001; Elliot & McGregor, 2001) and other dimensions of the classroom environment (see Fraser & Treagust, 1986; Fraser, 1998) have proven useful at the postsecondary level, they are based on an *a priori* approach. What is generally missing in the literature is an inductive approach to the identification and exploration of students' perspectives. Such an approach would intentionally start with students' perspectives regarding classroom features rather than with researchers' preconceived categories. That is, as Patrick (2004) has acknowledged, "in contrast to imposing only theoretically driven, *a priori* assumptions, categories, or measures on the data that may constrain the extent of

findings, an inductive approach allows researchers to move beyond existing theory and to identify new aspects or connections” (p. 247).

Furthermore, there was a need for further investigation concerning the processes by which student perceptions of the classroom goal structure emerge and the influence teacher practices have on building a synthesized perception of the learning environment (Pintrich, Conley, & Kempler, 2003). For example, according to Wolters (2004), “whereas all students may be exposed to similar instructional practices, their perceptions or interpretations of these practices can vary and are important to consider” (p. 239). Similarly, as Pintrich and colleagues (Pintrich, Conley, & Kempler, 2003) noted, “there may be individual differences that influence students’ perceptions of the classroom context in terms of which practices are perceived as salient and how previous school experiences or more stable personal goal orientations influence these perceptions” (p. 329). As such, examining the extent of association between students’ personally endorsed achievement goals and their perspectives about the classroom learning environment is an area that warrants further exploration.

Research Questions

Based on the overall objectives of this study, the following major research question was addressed: What do college students view as the most salient features of an optimally motivating classroom learning environment? The more specific research questions pursued within this investigation included the following:

1. What features of the classroom learning environment do students identify as having the greatest positive influence on their level of academic motivation?

2. What features of the classroom learning environment do students identify as having the greatest negative influence on their level of academic motivation?
3. What achievement goals are most strongly endorsed by students and, to what extent is there an association between the achievement goals students endorse and their perspectives about the motivating features of the classroom learning environment?

Theoretical Rationale

Two bodies of literature provided the theoretical rationale for the present investigation: (1) goal orientation theory and (2) classroom learning environment research. Each offers a framework for distinguishing features and dimensions of the classroom that influence various learning related outcomes. Figure 1 illustrates how these complementary fields of research converged to provide the theoretical underpinnings for this research study.

Figure 1. Diagram of the relationship between two distinct bodies of literature.

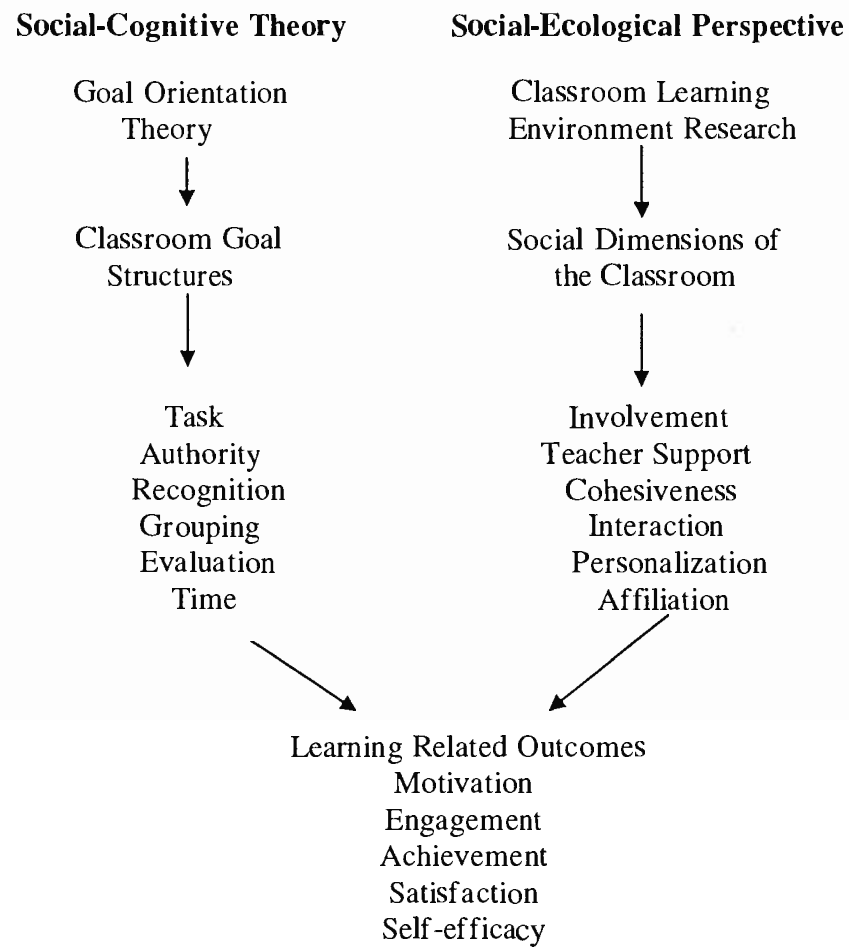


Figure 1. Diagram of the relationship between two distinct bodies of literature.

Operational Definitions

Terms and concepts used in this investigation are defined below. Literature-based and operational definitions are provided.

Achievement goals and orientations are cognitive representations of an individual's purposes and perceptions when approaching, engaging in, and responding to achievement situations.

Classroom goal structure refers to messages in the environment that make certain achievement goals salient.

Classroom learning environment, in this study, is defined as the elements of the educational psychosocial environment that influence students' perceptions, attitudes, and behaviors.

Mastery-approach goals reflect a focus on attaining positive possibilities such as acquiring new skills and improving one's competence.

Mastery-avoidance goals focus on avoiding negative possibilities such as losing skills or becoming incompetent.

Performance-approach goals reflect a focus on the attainment of favorable judgments of competence and ability.

Performance-avoidance goals reflect a focus on avoiding unfavorable judgments of competence and ability.

Preservice teacher in this study refers to an undergraduate student enrolled in a teacher preparation program.

CHAPTER II

Review of Related Literature

Introduction

This chapter presents a review of the literature in the two areas that served as the theoretical underpinnings for this investigation: goal orientation theory and classroom learning environment research. In order to provide a coherent examination of the literature on goal orientation theory, the review is divided into four sections. The first section examines theoretical frameworks and empirical evidence related to personal achievement goals. In the second section, the literature on classroom goal structures is reviewed. The third section delves into recent theorizing and research on person x context interactions. Lastly, future directions in goal orientation theory are considered.

The review of the literature related to the topic of the classroom learning environment begins with an examination of the fundamental theories behind the study of psychosocial environments in general and then traces the evolution of research that eventually led to the study of educational environments. The next section presents a brief description of the more prominent instruments for assessing and measuring dimensions of the classroom psychosocial environment. Third, particular attention is given to social dimensions of the classroom and their correspondence with various learning related outcomes. Finally, current trends in the research are presented.

Goal Orientation Theory

Personal Achievement goals – A Dispositional Perspective.

Developed within a social-cognitive framework, goal orientation theory posits that individuals engage in academic activities to fulfill different goals. “Rather than

conceiving students as possessing or lacking motivation, the focus is on how students think about themselves, their tasks, and their performance” (Midgley, Kaplan, Middleton, Maehr, Urdan, Anderman, Anderman, & Roeser, 1998, p. 114). Achievement goals include both a situational component and a more enduring personal component (Kaplan, Middleton, Urdan, & Midgley, 2002).

Various models of goals and goal orientations have been advanced to explain students’ reasons for choosing, performing, and persisting at various learning activities. Traditionally, two types of goal orientations have been used to understand and explain students’ academic behavior: *mastery* and *performance* (Ames, 1992; Ames & Archer, 1988). Mastery-oriented students, also referred to as learning-oriented (Dweck & Leggett, 1988), task-focused (Maehr & Midgley, 1991), and task-involved (Nicholls, 1984), tend to focus on *developing* competence; learning and understanding the task; and the use of self-referenced standards of improvement. By contrast, performance-oriented students, also described as ability-focused (Maehr & Midgley, 1991) and ego-involved (Nicholls, 1984), are concerned with *demonstrating* high ability or competence. In more recent research, a distinction has been made between approach and avoidance forms of performance goals. Elliot and colleagues (Elliot & Harackiewicz, 1996; Elliot & Church, 1997; Harackiewicz, Tauer, Barron, & Elliot, 2002) have proposed a trichotomous goal orientation framework that includes mastery, performance-approach, and performance-avoidance goals. The researchers suggest that individuals with a performance-approach orientation want to demonstrate their ability relative to others or prove their self-worth. Alternatively, individuals with a performance-avoidance orientation wish to avoid looking incompetent, lacking in ability, or less able than their peers (Wolters, 2004).

There has been a growing acceptance of the distinction between approach and avoidance forms of performance goals among goal theorists. Empirical evidence suggests that these two types of goal orientations have very different implications for cognitive, affective, and behavioral outcomes.

Most recently, Pintrich (2000a) and Elliot (1999) have proposed a 2 X 2 goal orientation framework. This framework suggests that mastery-avoidance goals may be operating for some individuals. For example, there may be occasions when a student is striving to avoid misunderstanding the course material or trying not to forget what he or she has learned (Finney, Pieper, & Barron, 2004). “The standards to be used reflect a concern with *not being wrong*, but it is not relative to others, it is only in reference to the self or to the task” (Pintrich, 2000a, p. 100, emphasis added). Table 1 reflects the two-dimensional matrix that allows for the classification of the two general goals that students might be striving for (mastery and performance) and their approach and avoidance versions. Whereas there has been little empirical research on the mastery avoidance goal, Elliot and McGregor (2001) and Finney, Pieper, and Barron (2004) have provided some initial findings that support the four distinct factors of goal orientation.

There is substantial empirical evidence linking students’ achievement goals and orientations to a wide range of educationally relevant outcomes. In the normative (dichotomous) framework, mastery orientation has traditionally been associated with adaptive outcomes. These include higher levels of efficacy, intrinsic interest, effort, and persistence as well as the use of more cognitive, metacognitive, and self-regulatory strategies (Ames, 1992; Ames & Archer, 1998; Pintrich, 2000a; Harackiewicz, Barron, & Elliot, 1998). Performance orientation, on the other hand, has generally been seen as

less adaptive and as having a negative influence on learning strategies, affect, motivation, and performance (Ames, 1992; Dweck & Leggett, 1988).

Table 1

2 X 2 Goal Orientation Framework

Orientation Mastery Orientation	Approach State Focus on mastering task, learning, understanding	Avoidance State Focus on avoiding misunderstanding, avoiding not learning or not mastering task
	Use of standards of self- improvement, progress, deep understanding of task	Use of standards of not being wrong, not doing it incorrectly relative to task
Performance Orientation	Focus on being superior, besting others, being the smartest, best at task in comparison to others	Focus on avoiding inferiority, not looking stupid or dumb in comparison to others
	Use of normative standards such as getting best or highest grades, being top or best performer in class	Use of normative standards of not getting the worst grades, being lowest performer in class

Table 1. From “An Achievement Goal Theory Perspective on Issues in Motivation Terminology, Theory and Research,” by P. Pintrich, (2000), *Contemporary Educational Psychology*, 25, p. 100.

Revised (trichotomous) goal theory research rather strongly suggests that performance-avoidance goals are maladaptive (e.g., Elliot & Church, 1997; Al-Emadi, 2001; Bembenuddy, 1999) whereas the research is less definitive with regard to the adaptive nature of performance-approach goals (see Elliot & Moller, 2003 and Urdan, 2005 for a review). For example, in their review of published studies that explicitly utilized the trichotomous achievement goal framework, Elliot and Moller (2003) found that performance-approach goals “may be construed in both positive and negative terms”

(p. 339). Specifically, the extant data indicated that performance-approach goals (a) were positively related to several positive processes and outcomes, (b) were unrelated to some positive and some negative processes and outcomes, and (c) did not appear to be reliably linked to any negative processes and outcomes. In testing the 2 X 2 goal framework among college undergraduates ($n = 148$), Elliot and McGregor (2001) found that performance-approach and performance-avoidance orientations were significant predictors of course-specific performance. The pattern for mastery-avoidance goals was more negative than that for mastery-approach goals and more positive than that for performance-avoidance goals. By contrast, Finney et al. (2004), in examining the predictive utility of the domain-specific measure of goal orientation among college students ($n = 2,111$), found mastery-approach and performance-avoidance orientations to be significant predictors of semester GPA.

The potential benefits of performance-approach goals have led some motivation theorists to endorse the “multiple goals perspective” as the most adaptive goal profile (e.g., Pintrich, 2000b; Barron & Harackiewicz, 2001, 2003; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997). Pintrich (2000b) investigated the relationships among the mastery and performance-approach orientations and multiple outcomes among eighth and ninth graders ($n = 150$.) In line with normative goal theory, mastery goals were found to be adaptive. In line with revised goal theory, performance-approach goals, when coupled with mastery goals, were just as adaptive. Barron and Harackiewicz (2003) noted positive, albeit different, effects of mastery and performance-approach goals on outcomes among college students ($n = 205$). Mastery goals were found to be positively linked to end-of-semester interest, whereas performance-approach goals were found to be

positively linked to final course grades. These findings paralleled those of Harackiewicz et al. (1997) who investigated the personality predictors of achievement goals in an introductory psychology class and the consequences of these goals for motivation and performance ($n = 311$). Students who adopted mastery goals were more interested in the class, while students who adopted performance goals (as distinguished from work avoidance goals) achieved higher levels of performance.

Barron and Harackiewicz (2001) have argued that there are four ways in which mastery and performance-approach goals can combine to promote optimal motivation. First, there may be additive effects for achieving a particular educational outcome (i.e., each goal is independently beneficial for a single outcome). Second, there may be interactive effects in achieving a particular educational outcome (i.e., the simultaneous adoption of both goals is more adaptive than endorsing either goal alone). Third, rather than promoting the same educational outcome there may be specialized effects in that mastery goals may promote one outcome and performance-approach goals may promote another (i.e., there are unique effects of both goal orientations across multiple outcomes). Finally, the selective effects pattern suggests that different achievement goals may be better suited for different types of situations and “students who can selectively shift between goals depending on the situation may be particularly advantaged” (Barron & Harackiewicz, 2003, p. 369). This pattern will be further considered in the discussion on person X context interactions.

Classroom Goal Structures – A Contextual Perspective.

Goal orientation theory posits that just as individuals can hold perceptions about the purposes of achievement, the classroom context or learning situation can provide

messages regarding the purposes for achievement. These messages are referred to as goal structures (Ames, 1992; Maehr & Midgley, 1991). In particular, the goal structure is created by cues in the achievement context that make different goals salient. Goal orientation theory proposes that the learning environment may be differentiated on the basis of whether it conveys a mastery or performance goal structure. For example, a teacher may emphasize the value of learning for its own sake and recognize students for understanding and improvement, thereby creating a mastery goal structure. Or, as Urdan (2001) clarifies, a teacher may stress the importance of learning about a subject because we live in a competitive world and the only way to get ahead is to know more than others. When students are recognized for doing better than others, a performance goal structure is created.

Building on the work of Epstein (1988), Ames (1992) attempted to systematically distinguish the constellation of classroom policies and practices (Deemer, 2004) that influence whether students in a given classroom perceive an emphasis on mastery or performance goals. The acronym TARGET (Task, Authority, Recognition, Grouping, Evaluation, Time) has been used to represent the highly salient dimensions or structures of the classroom environment that convey to students the purposes for engaging in achievement behavior.

The *task* dimension concerns the design of learning activities and assignments. Goal orientation theory suggests that there are several features of classroom tasks, such as the amount and diversity in tasks, how tasks are introduced and presented to students, and the level of difficulty of the task, that can influence student motivation and cognition (Pintrich & Schunk, 2002). The *authority* dimension involves the locus of responsibility

in the classroom and the degree of opportunity students have to take control over learning activities and develop a sense of independence (Ames, 1992; Pintrich & Schunk, 2002).

The *recognition* dimension focuses on the formal and informal use of rewards, incentives, and praise. Ames (1992) advocated that teachers focus on individual improvement, progress, and mastery and encourage students to view mistakes as part of the learning process. The *grouping* dimension refers to the various grouping arrangements teachers use in the classroom (e.g., heterogeneous cooperative groups) to encourage the students' ability to work effectively with others.

According to Ames (1992), the ways in which students are evaluated is one of the most salient classroom factors that can affect student motivation. As such, the *evaluation* dimension involves the methods used to monitor and assess student learning. Several factors that may influence different patterns of motivation include: (a) the standards and criteria; (b) the frequency of evaluation; (c) the publicness of evaluation practices; (d) the dispersion of grades; and (e) the type of feedback provided (Ames, 1992; Pintrich & Schunk, 2002). Finally, the *time* dimension includes the appropriateness of the workload, the pace of instruction, as well as the time allotted for completing the work (Pintrich & Schunk, 2002; Deemer, 2004).

Several researchers have suggested that the TARGET framework can serve as a foundation for highlighting and promoting mastery goals in the classroom (Ames, 1992; Maehr & Midgley, 1991; Blumenfeld, 1992; Pintrich & Schunk, 2002; Deemer, 2004). Ames (1992), and Maehr and Midgley (1991), for example, have suggested a number of strategies that teachers can use at the elementary and middle school levels to foster a mastery goal structure and facilitate the adoption of mastery goals. In response to

educational reform efforts that stipulate the use of research-based practices in the classroom, Deemer (2004) used the TARGET conceptual framework to model how research in these areas can help teachers at the secondary level create classroom environments that are focused on meaningful learning.

At the postsecondary level, Barron and Harackiewicz (2003) used the TARGET framework to examine the influence of task, authority, evaluation, and recognition structures on students' adoption of achievement goals, end-of-semester interest, and course grade ($n = 205$). Students' perceptions of a mastery goal structure were positively related to their end-of-semester interest, but had no effect on their final grades for the course. In contrast, the findings indicated that students' perceptions of a performance goal structure were negatively linked to end-of-course interest and had no effect on grades. Church, Elliot, and Gable (2001) investigated the relation of evaluation practices (i.e., evaluation focus and harsh evaluation) to students' achievement goal adoption ($n = 208$). Evaluation focus was found to be a positive predictor of both performance-approach and performance-avoidance goals, and a negative predictor of mastery goals. Harsh evaluation was found to be a positive predictor of performance-avoidance goals, a negative predictor of mastery goals, and unrelated to performance-approach goals.

Karabenick (2004) examined associations between college students' help seeking and their perceptions of the classroom goal structure ($n = 852$). After controlling for students' personal goal orientation, findings indicated that a perceived class emphasis on mastery goals positively predicted help-seeking patterns and negatively predicted help-seeking avoidance patterns. By contrast, students in classes with greater perceived emphasis on performance-avoidance goals demonstrated higher levels of help-seeking

avoidance patterns. Morrone, Harkness, D'Ambrosio, and Caulfield (2004) investigated whether instructional discourse in a social constructivist college mathematics course influenced students' perceptions of a mastery goal structure. Findings from the study were consistent with Turner's (2002) suggestion that teachers establish mastery-oriented classrooms through discourse patterns that emphasize understanding student autonomy, while de-emphasizing evaluation of students' contributions and explicit instruction on how to arrive at a correct answer (Turner, 2002 as cited in Morrone, Harkness, D'Ambrosio, & Caulfield, 2004).

In the classroom setting, grades are often the most salient form of performance feedback for students (Shim & Ryan, 2005). The influence of classroom evaluation practices on motivation and other learning related behaviors among college students has been the focus of several investigations. Senko and Harackiewicz (2005) explored the extent to which college students regulated their achievement goals in response to competence feedback ($n = 166$). Poor exam performance predicted a significant decrease in mastery goal and performance-approach goal pursuit and an increase in performance-avoidance goal pursuit. In a short-term longitudinal study of 361 college students, Shim and Ryan (2005) examined the relationship between achievement goals and changes in students' self-efficacy, challenge avoidance, and intrinsic value in response to grades. Data were collected at the beginning of the semester and immediately after students received their grades on their first major exam or paper. As expected, performance-avoidance goals were associated with diminished motivation around the receipt of lower grades after adjusting for the initial levels of students' motivation. A mastery goal was associated with enhanced motivation, whereas a performance-approach goal was

associated with diminished motivation when students received low grades but not high grades. When students' perceptions of success were analyzed, a similar pattern of relationships between goals and changes in motivation was found. Pollio and Beck (2000) conducted three separate studies to assess the positive and negative values that college students and instructors attach to learning and grade orientations. Findings indicated that student perceptions ($n = 212$) of instructor orientations toward grades and learning were not prominent correlates of their own achievement orientations. Most students wanted their college instructors to be more learning oriented and less grade oriented in their instructional practices, regardless of their own personal orientations.

To summarize, whereas there is less research available on goal contexts in comparison to goal orientations, mastery-oriented contexts have generally been shown to promote a variety of adaptive learning related behaviors (Ames & Archer, 1988; Kaplan & Maehr, 1999; Roeser, Midgley, & Urdan, 1996). These include personal mastery goal orientation, adaptive motivation, self-efficacy, use of effective learning strategies, help seeking, and adaptive coping strategies after failure (Partick, 2004; Ames & Archer, 1988; Turner et al., 2002). Alternatively, classroom goal structures that are perceived as performance-oriented have demonstrated a mixed pattern of findings (Ames & Archer, 1988; Kaplan & Maehr, 1999; Roeser, et al., 1996).

Person-Context Interplay—An Interactionist Perspective.

As the previous review indicated, many goal theorists have suggested that the effects of the goal context on various learning outcomes are *mediated* by students' personal goal adoption (Church et al., 2001; Roeser et al., 1996). This hypothesis has been substantiated by findings that have indicated a positive relation between the goal

structure students' perceive as emphasized in the classroom and their adoption of the analogous personal goal orientation (Wolters, 2004). By contrast, other theorists have suggested that the relation of contextual goals to learning outcomes may be *moderated* by students' personal goals. More specifically, "the goal context may interact with personal goals to influence learning-related outcomes" (Linnenbrink, 2004, p. 173). Several hypotheses have been proposed to describe person x context interactions. For example, the buffering hypothesis (Linnenbrink & Pintrich, 2001) suggests that "either personal mastery goals or a mastery context will help to buffer the possible detrimental effects of endorsing personal performance-approach goals or working in a performance-oriented context" (Linnenbrink, 2004, p. 174). Here, the emphasis is on mastery, rather than the match or mismatch between personal and context goals.

The matching hypothesis (Harackiewicz & Sansone, 1991; Linnenbrink & Pintrich, 2001) suggests that students will benefit from classroom contexts that match, or are congruent with, their own personal goal orientation. That is, "students should see the most benefits across multiple outcomes when their personal goal strivings can be met by the context" (Linnenbrink, 2004, p. 175). The basic premise underlying this hypothesis is that a fit or mismatch between personal goal orientations and contextual goal structures might explain when and why certain goals will eventuate in adaptive outcomes or not (Roeser, 2004). Accordingly, "students working in contexts that do not support the pursuit of a goal matching their own goal orientation may become frustrated and disengage from the activity, resulting in a host of negative outcomes" (Linnenbrink, 2004, p. 175). The matching hypothesis was recently tested among college students ($n = 382$) in a laboratory experiment conducted by Jagacinski, Madden, and Reider (2001).

Specifically, the researchers examined whether personal goal orientations would interact with a task (mastery) or ego (performance) instructional manipulation to predict performance on a brainstorming task. An interaction was found in the case of task orientation but not for ego orientation. For task orientation, “matching the task-involving instruction to the individual’s personal orientation had a synergistic effect on performance” (Jagacinski et al, 2001, p. 334).

Barron and Harackiewicz (2001), operating from the multiple goals perspective, offer the selective goal pattern as an extension of the matching hypothesis. According to this pattern, “students focus on the achievement goal that is most relevant at a particular point in time” (Harackiewicz, Pintrich, Barron, Elliot, & Thrash, 2002, p. 640). The underlying premise is that “different goals may be adaptive in different situations, and students who can selectively shift between goals may be particularly advantaged” (Harackiewicz, et al., 2002, p. 640). For example, an introductory class at a large university may reflect a classroom environment in which performance or performance-approach goals are particularly adaptive. “These classes are [often] taught as large lectures, use multiple choice exams to evaluate students’ learning, and assign grades based on normative comparisons” (Barron & Harackiewicz, 2003, p. 359). By contrast, mastery goals may be more adaptive in a small advanced seminar, where there is an emphasis on student participation, group projects, and essay exams. Or, as initial empirical evidence suggests, there may be adaptive benefits to pursuing performance-approach goals in addition to mastery goals in college classes (Barron & Harackiewicz, 2001, 2003; Pintrich, 2000b).

Lastly, Linnebrink (2004) posits the notion that there are unique effects of personal and contextual goals on learning outcomes. According to this perspective, personal goals and contextual goals may relate to different learning outcomes or the same learning outcomes in different ways. Linnenbrink acknowledges that additional research is needed in order to confirm or refute this position.

Future Directions.

Pintrich, Conley, and Kempler (2003) have brought together current issues being explored by achievement goal researchers and have suggested future directions for research. First, the authors recommend that researchers strive to become more consistent in the meanings they adopt and in their operationalization of achievement goals. Second, Pintrich et al. acknowledge the need for additional research to examine whether the adoption of a trichotomous or 2 X 2 achievement goal model is more appropriate. A consideration of how achievement goals operate in context poses a third avenue for future research. Similarly, Urdan (2001) underscores the importance of extending the research on classroom contexts. He highlights the significance of examining the antecedents and consequences of classroom goal perceptions, as well as various moderator effects such as developmental level, gender, ethnicity, and achievement history. Finally, as Patrick and colleagues (Patrick, 2004; Turner, Midgley, Meyer, Gheen Anderman, Kang, & Patrick, 2002; Patrick & Ryan, 2003) have advocated, motivation researchers need to consider complementary theories that might enhance our understanding of the classroom environment and help clarify classroom features that foster adaptive learning-related behaviors.

Classroom Learning Environment Research

Historical Background and Evolution.

The theoretical framework for understanding the importance of environmental influences on individuals is rooted in the work of Lewin (1936) and Murray (1938). Lewin believed human behavior is determined by the complex and reciprocal interaction of an individual and his/her environment (Baek & Choi, 2002). His idea was defined by the formula $B = f(P, E)$, whereby B represents behavior and f is the function of the interaction of P (the person) and E (the person's environment). Lewin also asserted that an individual's behavior could be influenced by various factors such as character, motivation, cognitive structure, and ways of perceiving the environment. Years later, Fraser and Fisher (1982) came to a similar conclusion, noting that relationships exist between students' affective characteristics, their cognitive outcomes, and their perceptions of classroom psychosocial environments.

Based on Lewin's (1936) formula, Murray (1938) developed the Needs-Press Model to include the notion of one's personal needs and the concept of environmental press. Environmental press refers to the external situation that either supports or hinders the realization of personal needs (Baek & Choi, 2002). In particular, Murray classified environmental demands as being either objective (alpha press) or subjective (beta press). Although both types of environmental demands are considered important, he suggested that subjective perceptions are more likely to influence human behavior. In other words, an individual will likely try and avoid situations perceived as harmful and try to access environments perceived as beneficial.

Murray's distinction between alpha press and beta press was extended by Stern, Stein, and Bloom (1956), who distinguished between the idiosyncratic view that each person has of the environment (private beta press) and the shared view that members of group hold about the environment (consensual beta press) (Fraser, 1991). According to Stern and colleagues, private and consensual beta press could differ from each other, and both could differ from the objective (alpha press) view of the nonparticipant observer. Subsequently, Pace and Stern (1958) began investigating the association of major fields of study with social climates in institution-wide postsecondary environments. Their work resulted in the *College Characteristics Index* (CCI), a 30-scale instrument consisting of 300 True-False items.

The pioneering of work of Moos and Walberg, conducted in the late 1960s and 1970s, served as the basis for most of the current research on educational environments. Independent of one another, each began considering educational psychosocial environments and their influence on student outcomes. Moos (1979) set forth five conceptions of how human environments operate. These include: (a) the perspective of evolution and human ecology (environments limiting the actions of people), (b) the perspective of social Darwinism (environments favoring people with stronger characteristics), (c) the notion that environments motivate and challenge individuals, (d) the notion that individuals seek information about environments in order to select those environments with the greatest probability of success, and (e) the notion that individuals seek to increase their control over environments (Walker, 2004). The integration of these concepts led to the development of what Moos termed "a social ecological approach" (p. 28). The social ecological perspective, also advanced by Bronfenbrenner

(1979), assumes that classrooms, just like other social settings, have a fairly explicit set of social structures, norms, and expectations that govern and shape behavior (Meece, 1991).

Moos (1979) argued further that just as it was possible to characterize an individual's personality, environments could be characterized in terms of personalities. He suggested that social environments, like persons, could have qualities such as warmth and supportiveness, or rigidity and restriction (Baek & Choi, 2002). Based on research conducted in junior high school classrooms, Moos identified three theoretical dimensions of the classroom psychosocial environment: (a) the relationship dimension, (b) the personal growth or goal orientation dimension, and (c) the system maintenance or change dimension. The relationship dimension includes factors such as involvement, affiliation, teacher support, peer cohesion, and conflict resolution. Factors such as task orientation, competition, achievement, and interdependence are included in the personal growth or goal orientation dimension. The system maintenance or change dimension includes factors such as organization, rule setting, rule clarity, and teacher control (Moos, 1979). Several of the instruments designed to assess dimensions of the classroom learning environments are based on Moos's theoretical framework.

Walberg's (1979) research was spearheaded by two humanistic questions that he noted recurred in the history of education: "What are the ends of education?" and "Do the educational means, that is, manipulations of the environment, justify the ends?" (p. 1). Based on his theory of educational productivity, Walberg postulated that "psychosocial characteristics in classrooms provided valid indicators of factors of student achievement, and perhaps even goals of their own accord to balance academic measurement by means

of test scores alone” (Walberg, 1981 as cited in Walker, 2004, p. 7). From his social-psychological research, Walberg developed the *Learning Environment Inventory* (LEI). He also went on to derive 36 hypotheses concerning the direction of relations between selected LEI scales and learning criteria (Haertel, Walberg, & Haertel, 1981).

Assessment and Evaluation Instruments.

The field of learning environment research has developed rapidly, as illustrated by the extensive array of validated instruments and empirical studies. According to Fraser (1998), at least 12 major areas of past research may be identified. These include looking at associations between student outcomes and the environment, noting differences between student and teacher perceptions of the same classroom, and using assessment information to facilitate positive change in the classroom. In addition, three key distinctions may be observed when considering the variety of instruments designed to assess the qualities of educational environments. The first is whether an instrument examines the environment at the school level or the classroom level. A second distinction is whether the class (group) or personal form of an instrument is utilized in the research. Lastly, an important distinction has to do with whether the focus of a particular study is on the actual (experienced classroom environment) or preferred (ideal classroom environment) environment (Fraser, 1998). Fraser (1998) has summarized the more prominent instruments for assessing the classroom environment and these are reflected in Table 2.

Table 2

Overview of Classroom Environment Instruments

Instrument and Level Learning Environment Inventory (LEI) (Secondary)	Social Relationship Dimensions Cohesiveness Friction Favoritism Cliquesness Satisfaction Apathy	Personal Development Dimensions Speed Difficulty Competitiveness	System Maintenance or Change Dimensions Diversity Formality Material Environment Goal Direction Disorganization Democracy
Classroom Environment Scale (CES) (Secondary)	Involvement Affiliation Teacher Support	Task Orientation Competition	Order & Organization Rule Clarity Teacher Control Innovation
Individualized Classroom Environment Questionnaire (ICEQ) (Secondary)	Personalization Participation	Independence Investigation	Differentiation
My Class Inventory (MCI) (Elementary)	Cohesiveness Friction Satisfaction	Difficulty Competitiveness	-----
Questionnaire on Teacher Interaction (QTI) (Primary/Secondary)	Helpful/friendly Understanding Dissatisfied Admonishing	-----	Leadership Student Responsibility and Freedom Uncertain Strict
What is Happening in This Classroom (WIHC) (Secondary)	Cohesiveness Teacher Support Involvement	Investigation Task Orientation Cooperation	Equity
College & University Classroom Environment Inventory (CUCEI) (Higher Education)	Personalization Involvement Cohesiveness Satisfaction	Task Orientation	Innovation Individualization
Constructiveness Learning Environment Survey (CLES) (Secondary)	Personal Relevance Uncertainty	Critical Voice Shared Control	Student Negotiation
Adult Classroom Environment Scale (ACES) (Adult)	Involvement Affiliation Teacher Support	Task Orientation Personal Goal Attainment	Organization Clarity Student Influence

Note. Adapted from "Classroom Environment Instruments: Development, Validity and Applications", by A. Fraser, 1998, *Learning Environments Research*, 1, p. 10. Copyright 1998 by Springer Science and Business Media. Reprinted with permission.

Initial development and validation of a preliminary version of the *Learning Environment Inventory* (LEI) began much earlier in conjunction with evaluation and research related to the Harvard Project Physics (Fraser, 1991). The LEI was constructed from the perspective that students as well as the teacher are determinants of the learning environment (Walker, 2004). The final version of the LEI contains a total of 105 statements (seven per scale) descriptive of typical classrooms. The *Classroom Environment Scale* (CES) was developed by Rudolf Moos at Stanford University and emerged out of a comprehensive program of research involving psychiatric hospitals, prisons, university residences, and work environments (Fraser, 1991). The CES conceptualizes the classroom environment “as a dynamic social system that includes not only teacher behavior and teacher-student interaction but also student-student interaction” (Moos, 1979, p. 138). Following a number of trials, Moos and Trickett’s (1987) final published version contains nine scales, with 10 True-False items in each scale.

The *Individualized Classroom Environment Questionnaire* (ICEQ) was the first instrument not focused on teacher-centered instruction. It differs from other classroom environment scales in that it distinguishes individualized from conventional classrooms by assessing dimensions such as personalization and participation (Fraser, 1991). The final published version of the ICEQ (Fraser, 1990) contains 50 items, with 10 items in each of the five scales. *My Class Inventory* (MCI) is a simplified version of the LEI, adapted for use with younger children, age 8 to 12 years. The final form contains 38 items. There are several forms of this instrument including: (a) the student expected form for use in a new class; (b) the student preferred form; (c) the student actual form; (d) the teacher preferred form; and (e) the teacher actual form.

The *Adult Classroom Environment Scale* (ACES) has the distinction of being designed to measure adult students' perceptions of the classroom environment.

Darkenwald (1989) drew from Moos's (1979) paradigm of the psychosocial environment to construct the scales. According to Darkenwald (1989), the ACES measures seven empirically based dimensions that describe "a positive or growth enhancing adult learning environment" (p. 69). The scale, which is self-administered, consists of 49 items for each of seven dimensions.

The *Questionnaire on Teacher Interaction* (QTI) is theoretically based on Leary's (1957) two-dimensional model of interpersonal behavior. The Leary model has been investigated extensively in clinical psychology and psychotherapeutic settings. Wubbels, Creton, and Hooymayers (1985) adapted the Leary model and developed a model that focuses exclusively on teacher-student interactions. Accordingly, the QTI is used to measure secondary students' and teachers' perception of teacher interpersonal behavior.

What Is Happening In This Classroom (WIHIC) is perhaps one of the more widely adopted and modified learning environment instruments. It was developed to bring economy to the field by combining the most relevant scales from already existing questionnaires (Walker, 2004). The WIHIC focuses on secondary classrooms and has a personal as well as a class version. Originally a 90-items, nine-scale instrument, the final form consists of seven eight-item scales. Three scales of the instrument – student cohesiveness, cooperation, and equity – are particularly relevant to the science learning environment. Versions of the WIHIC have been successfully administered in Singapore, Taiwan, Canada, Australia, and India (Walker, 2004).

The *College/University Classroom Inventory* (CUCI), developed by Fraser and Treagust (1986), was designed to assess student and teacher perceptions of the postsecondary classroom environment. Specifically, the instrument was developed to measure perceptions of tutorial or small groups classes (up to 30 students) typically encountered at the college and university level. As with several of the other instruments presented, the CUCI has an actual and a preferred form. The final form consists of seven scales containing seven items each. Each item has four responses (Strongly Agree, Agree, Disagree, Strongly Disagree) and the polarity is reversed for approximately half of the items (Fraser, 1998).

The *Constructivist Learning Environment Survey* (CLES) was originally developed with “a psychosocial view of constructivist reform that focused on students as co-constructors of knowledge” (Taylor, Fraser, & Fisher, 1997, p. 293). However, it did not consider the cultural context framing the classroom environment. The revised version (Taylor, Fraser, & Fisher, 1997) was designed to capture the fact that the very culture in which a class exists has a strong influence on perceptions of the psychosocial environment and learning (Walker, 2004). The redesigned CLES is a 30-item questionnaire that contains five scales. Versions of the CLES have been used to evaluate university courses in the United States. The CLES has been translated for use in Taiwan and Korea.

Social Dimensions and Learning Related Outcomes.

Research conducted over the last three decades has shown the quality of the classroom learning environment to be a significant determinant of various learning related outcomes. Studies have examined aspects of the classroom learning environment

in relation to academic achievement (Ghaith, 2003), academic efficacy (Dorman & Adams, 2004), student participation (Fassinger, 1997, Courtenay, 2002), apprehension and state motivation (Myers & Rocca, 2001), and cheating behavior (Pulvers & Diekhoff, 1999). The research has revealed that student perceptions of the classroom learning environment account for appreciable amounts of the variation in student learning outcomes, often beyond that attributable to student background characteristics (Fraser, 1991).

Since Moos (1979) first distinguished the relationship dimension of different environments (e.g., cohesion, expression, support, affiliation, involvement), social dimensions of the classroom and their correspondence with various learning related behaviors have received growing attention in the literature. For example, Hirschy and Wilson (2002) considered how social status, role relationships, and structural inequalities affected students in the context of a college classroom. Particular emphasis was given to role relationships, which can be discerned by observing interaction patterns between the instructor and students, and among student peers. Hirschy and Wilson noted that as students and faculty develop relationships through interaction and common goals over the course of a semester, social forces emerge that either facilitate or impede the learning process.

Ghaith (2003) examined the relationship between cooperative, individualistic, and competitive forms of instruction and achievement among university-bound students ($n = 135$). He found a moderate positive correlation between cooperative instruction and learners' perceptions of fairness of grading, class cohesion, and social support. Similarly, Dorman and Adams (2004) found higher academic efficacy to be associated with

improved levels of teacher support, task orientation, cooperation, and equity in their study of the associations between students' perceptions of the classroom environment and academic efficacy among high school students in Australia and England ($n = 2,651$). At the postsecondary level, Cabrera, Colbeck and Terenzini (2001) found that instructor interaction and feedback, and collaborative learning consistently predicted gains in professional competencies among undergraduate engineering students ($n = 1,250$).

Pulvers and Diekhoff (1999) revealed that perceptions of the classroom environment, including social dimensions, were related both to cheating behavior and the tendency to neutralize or justify cheating among college undergraduates ($n = 280$). Students who admitted to cheating viewed their classes as less personalized, less satisfying, and less task-oriented. Perceptions of the classroom environment as less personalized, less involving, less cohesive, less satisfying, less task-oriented, and less individualized were found to accompany students' tendency to justify their cheating behavior (Pulvers & Diekhoff, 1999).

Courtenay (2002) studied the factors associated with participation of learners in a multi-age college classroom ($n = 10$) and found that two major themes emerged from the data analysis: (a) classroom environment and (b) nature of interactions. Categories associated with the classroom environment included social climate, instructor influence, and physical structure of the classroom whereas social interactions and course-focused interactions were categories that emerged from the data on the nature of interactions. Interestingly, the findings yielded the same results for traditional-age and adult students. Fassinger (1995) also examined classroom participation among college students ($n = 1,059$). She found that professors' interpersonal style was not directly related to student

class participation. Class traits such as emotional climate and interaction norm, as well as individual student traits, seemed to be better predictors of students' silence or involvement.

A number of studies have investigated the social dimensions of classroom learning environments in relation to student motivation as well as other cognitive and affective outcomes. In their early meta-analysis of classroom environment studies, Haertel, Walbert, and Haertel (1981) found a strong association between student motivation, achievement, and satisfaction, on one hand, and student perceptions of the social-psychological environments of their classes on the other hand. After analyzing 12 studies with data that involved over 800 classes and represented 17,805 students in four nations, the researchers concluded that gains in cognitive, affective, and other adaptive learning outcomes were consistently associated with classrooms perceived as having, among other characteristics, greater cohesiveness, satisfaction, and democracy.

Myers and Rocca (2001) chose to examine how college students' perceptions of instructor argumentativeness and verbal aggressiveness were associated with the students' perceptions of the classroom climate, with their reported levels of classroom apprehension, and with their reported levels of state motivation ($n = 236$). State motivation refers to an individual's motivation in a specific learning situation (e.g., a particular class, task, or content area). According to Myers and Rocca, state motivation is dependent on several factors, some of which are teacher-centered and some of which are student-centered. With regard to teacher-centered factors, researchers have found that when instructors engage in particular communication behaviors, students report higher levels of state motivation (Myers & Rocca, 2001). In their particular study, Myers and

Rocca found that perceived instructor argumentativeness was positively related to perceived student state motivation. Conversely, perceived instructor verbal aggressiveness was negatively related to perceived student state motivation. The data further suggested that argumentativeness and verbal aggressiveness are two communication behaviors used by college instructors and that use of these behaviors has “important ramifications for student participation in the classroom” (p. 131).

Wosnitza and Nenniger (2001) have noted that, insofar as research is concerned, the subjective perspective of the social reality of the classroom environment shows a close correspondence with motivation. The subject perspective of the social reality refers to “a description of social aspects of the learning environment on an individual perception level” (p. 174). Wosnitza and Nenniger have examined the significance of aspects of a subjectively perceived learning environment on motivation within schools and universities with three descriptors: (a) the *teacher*, (b) the individual *student*, and (c) the *class* or group of students to which the individual student belongs. Figure 2 elucidates the conceptual framework set forth by Wosnitza and Nenniger. As shown, the three descriptors (teacher, student, class) have a direct systemic connection with each other, which lead to three kinds of relations: (a) student-teacher relations, (b) student-class relations, and (c) class-teacher relations.

With regard to the descriptor “student,” Wosnitza and Nenniger (2001) emphasize the significance of a sense of autonomy. This sense of autonomy refers to the entire process of learning in which “individuals take the initiative and, with or without the help of others, ascertain their learning needs, formulate their learning goals, determine human and material resources, select and implement learning strategies, and assess their learning

outcomes” (p. 176). According to Wosnitza and Nenniger, learning environments in which students’ efforts to achieve autonomy are supported also tend to be conducive to developing motivation based on student’s self-directed behavior.

The descriptor “class” denotes the subjective shared (group) perception of the interaction structure of the learning environment, which translates into a favorable or non-favorable group atmosphere. Research has shown that a favorable group atmosphere has a positive effect on student motivation (Wosnitza & Ninniger, 2001; Moos & Tricket, 1987). Wosnitza and Ninniger have identified “teacher” as the third descriptor in their conceptual framework because the teacher has the primary responsibility for the arrangement of the learning environment. Three factors relating to the structure of the process in teaching and learning arrangements are highlighted: (a) the course of the lesson (e.g., content, tasks, methods); (b) the clarification of connections (e.g., integrating content within the course and beyond); and (c) the creation of transparency (e.g., clarity of goals).

The intersection between “student” and “class” constitutes one of the relationships in Wosnitza and Nenniger’s (2001) model and is of great significance for supporting motivation. The researchers assert that the degree to which a student feels socially included or isolated in the learning environment can influence the extent to which he or she feels able to act autonomously. Acceptance or rejection of a student by the class becomes an important point of focus.

Class

Figure 2. Areas of the social system learning motivation.

Note. From "Perceived Learning Environments and the Individual Learning Process: The Mediating Role of Motivation in Learning," by M. Wosnitza and P. Nenninger, 2001, In: S. Volet and S. Jarvela (Eds.), *Motivating in Learning Contexts: Theoretical and Methodological Implications*, p. 175. Copyright 2001 by Elsevier Science Ltd. Reprinted with permission.

According to the model, another important relation is formed by the intersection between “student” and “teacher.” Wosnitza and Nenniger (2001) identify teacher behavior and level of demand as the two perspectives to be considered. The teacher behavior dimension, as a motivational component, includes the cooperation between teacher and student as well as the extent to which the student feels supported by the teacher. Level of demand relates to a student’s subjectively perceived degree of difficulty (optimal, too high, too low) of the subject or task at hand. According to Wosnitza and Nenniger, a level of demand that a student deems optimal has a promotive effect on his or her intrinsic motivation and increases the motivation to work.

Finally, the motivational and the performance-oriented aspects converge once again to form the “class-teacher” relationship. This time, however, a collective perspective is taken with regard to characteristics such as teacher behavior and level of demand. Wosnitza and Nenniger have used their conceptual framework to analyze ways in which such environment conditions are related to motivational behaviors among college undergraduates at German universities.

Current Trends.

Research on learning environments continues to be an expanding field of study. One emerging body of literature delves into the area of Internet-based distance education. Several instruments have been developed to assess a range of dimensions within the distance education learning environment, including student cohesiveness, instructor support, personal involvement, interactivity, active learning, and anxiety (see Walker, 2003 for a review). For example, Walker’s (2003) study yielded a new Web-based learning environment instrument, the *Distance Education Learning Environment Survey*

(DELES), which is suitable for use in a number of asynchronous postsecondary distance education environments. The six-scale, 34-item instrument assesses instructor support, student interaction and collaboration, personal relevance, authentic learning, active learning, and student autonomy.

The case for understanding motivation in learning contexts has also emerged as a trend in recent research. Volet (2001b) identifies six conceptual shifts in the way research in this area seems to be evolving. These include: (a) the shift from a decontextualized to a situated and experiential approach; (b) the emergence of dynamic conceptualizations of motivation which challenge traditionally trait-based conceptualizations; (c) the shift from a dominance of cognitive aspects to multi-dimensional aspects; (d) the shift from single-level to multi-level conceptualizations and analyses (e.g., learning contexts at the micro, meso, exo, and macro levels); (e) the shift from uni-directional to bi- or multi-directional individual and contextual influences; and (f) the shift from single to integrated or multidimensional theoretical perspectives.

Furthermore, as Volet (2001b) points out, these conceptual shifts have challenged traditional research methodologies. Researchers have responded by developing new and innovative approaches to the study of motivation in context. One general trend that has emerged across studies has been the use of mixed, rather than mono-methods and a combination of qualitative and quantitative analyses. Another trend reflects the shift from single to multiple data sources, as well as the shift from single to multiple perspectives. Finally, a number of researchers have included multiple contexts in their research designs in order to trace the evolution of motivation in relation to context (Volet, 2001b).

CHAPTER III

Methodology

Introduction and Research Design

The design of the mixed methods study was inspired by the work of Witcher, Onwuegbuzie, and Minor (2001) and Minor, Onwuegbuzie, Witcher, and James (2002). In their investigations, the researchers sought to examine preservice teachers' perceptions of the characteristics of effective teachers, and to investigate factors (e.g., gender, ethnicity, age, year of study, area of specialization, and educational beliefs) that may have influenced their responses. Data analyses procedures for the present study were informed by the qualitative research and evaluation methods outlined by Guba (1978) and Patton (2003), as well as by the process for performing mixed methods data analyses set forth in the writings of Onwuegbuzie and Teddlie (2003) and Onwuegbuzie (2001).

Participants and Setting

Participants in this study consisted of 122 preservice teachers attending a private, Catholic university located on the East Coast. Nonprobability purposeful (purposive) sampling was used to identify the sample members. Purposeful sampling is most often used in qualitative research to select individuals that will better inform the researcher regarding the current focus of the investigation (Krathwohl, 1998). In this sampling technique, samples are assembled by intentionally seeking individuals or situations likely to yield new instances and greater understanding of a dimension or concept of interest (Krathwohl, 1998). According to Patton (2002), the logic and power of purposeful sampling lie in selecting information-rich cases from which one can learn a great deal about issues of central importance to the purpose of the study.

As part of their preparation, preservice teachers have the opportunity to focus on many dimensions of the classroom learning environment. They review curricula, examine methods of effective instruction, preview materials and equipment, and explore various classroom management techniques and grouping strategies that facilitate teacher-student and student-student interactions. The preparation program also strives to develop the preservice teacher to be a reflective practitioner, problem solver, and decision maker. Additionally, throughout their teacher training, preservice teachers engage in various activities that encourage them to examine their own experience as learners. Overall, this population offered a sample of information-rich cases to draw upon for the current investigation. Specifically, the sample in this study was delimited to preservice teachers enrolled in four sections of the *Life in the Diverse Classroom* and three sections of *Teaching Science in the Diverse Classroom*.

Instrument

The study employed a descriptive survey design that involved the collection of both quantitative and qualitative cross-sectional data. Participants were asked to complete a three-part questionnaire titled *Undergraduate Survey of Classroom Features and Student Motivation*. Part I of the questionnaire assessed respondents' personal goal orientations. Part II of the questionnaire included two open-ended questions that asked respondents to describe features of the classroom learning environment that positively and negatively influenced their level of academic motivation. The last part of the questionnaire elicited specific demographic information.

Part I: Personal Achievement Goals.

Self-report measures of student achievement goals were assessed with items taken from the *Attitude Toward Learning and Performance in College This Semester* questionnaire developed by Finney, Pieper, and Barron (2004). This instrument is based on the 2 X 2 goal framework proposed by Elliot (1999) and Pintrich (2000a) and constitutes a modified version of Elliot and McGregor's (2001) *Achievement Goal Questionnaire* (AGQ). Elliot and McGregor (2001) conducted a series of pilot studies to select or devise items to form their brief, but reliable and valid indexes of each of the four achievement goals in the 2 X 2 framework. Items were systematically selected from the researchers' existing measures (Elliot, 1999; Elliot & Church, 1997) for mastery-approach, performance-approach, and performance-avoidance goals. New items were devised to measure mastery-avoidance goals. Following the development of the survey instrument, the researchers conducted a series of studies designed to investigate the 2 X 2 achievement goal framework in general and the mastery-avoidance goal construct in particular. The studies were conducted in the undergraduate classroom and involved students enrolled in an introductory-level psychology course ($n = 180$). Factor analytic results supported the independence of the four achievement goal constructs. Results of the confirmatory factor analysis (CFA) on the mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goal measures evidenced moderate to high levels of internal consistency.

Whereas Elliot and McGregor (2001) provided initial evidence for the 2 x 2 goal framework in the specific context of an undergraduate psychology class, as Finney, Pieper, and Barron (2004) have pointed out, the extent to which these findings were

generalizable to wider contexts was unknown. The need for more evidence of validity for the goal orientation measures, as well as the need for more goal orientation measures operationalized at the level of major life domains (e.g., academics, work, athletics), has been previously advocated (see Vandewalle, 1997). Reviewing the range of existing instruments designed to measure goal orientation, Finney and colleagues provided the following observation:

It is unclear whether responses to context-specific instruments, such as goal orientation in a specific course, are a function of general attitudes such as goal orientation in the domain of academics or are a function of specific context. Global instruments, on the other hand, may not capture domain-specific orientations because they lack reference to any domain (p. 368).

Furthermore, as Pintrich (2000a) has noted, the access to different goal orientations in different situations does not necessarily imply that there cannot be some “intraindividual stability over time and domains” (p. 102).

In order to answer the call for examining achievement goal orientation at different levels of specificity, Finney et al. (2004) modified the items of the AGQ so that goal orientation could be operationalized at the level of general academic achievement. Specifically, all of the items were rewritten in reference to achievement during the respondents' current semester rather than a specific class. The revised instrument has been titled *Attitude Toward Learning and Performance in College This Semester*. Finney and colleagues examined the psychometric properties of the *Attitude Toward Learning and Performance in College This Semester* instrument by conducting a study involving a sample of first-time freshman students at a mid-sized East Coast university ($n = 2,111$). The fit of the four-factor goal orientation model (i.e., mastery-approach, mastery-avoidance, performance-approach, performance-avoidance), when compared to four other

models, was supported: comparative fit index (CFI) = .95; root mean square error of approximation (RMSEA) = .066; standardized root mean square residual (SRMR) = .048. The four-factor model fit significantly better than all alternative models, with none of them showing adequate fit indices. Internal consistency was established by calculating Cronbach's coefficient alphas for the scores from each of the four goal orientations. The reliabilities of the scores for the items representing mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance were $\alpha = .76, .74, .88$, and $.68$ respectively. It is important to note that the internal reliability and validity was established using a much larger and more representative sample ($n = 2,111$) than the initial studies conducted by Elliot and McGregor (2001).

Like the original AGQ, the *Attitude Toward Learning and Performance in College This Semester* questionnaire uses a 1 (*not at all true of me*) to 7 (*very true of me*) response scale. Respondents are directed to rate their goal orientation for the current semester. Examples of items assessing a mastery-approach orientation include "Completely mastering the material in my courses is important to me this semester" and "The most important thing for me this semester is to understand the content in my courses as thoroughly as possible." A mastery-avoidance orientation is represented by items such as "I am afraid that I may not understand the content of my courses as thoroughly as I'd like" and "I worry that I may not learn all that I possible could this semester." A performance-approach orientation is represented by items such as "My goal this semester is to get better grades than most of the other students" and "It is important for me to do well compared to other students this semester." Examples of items assessing a performance-avoidance orientation include "I just want to avoid doing poorly compared

to other students this semester” and “My goal this semester is to avoid performing poorly compared to other students” (see Appendix A for the complete set of achievement goal items).

As the present doctoral investigation sought to explore college students’ perspectives on the motivating features of their college classes at a midlevel of specificity, the *Attitude Toward Learning and Performance in College This Semester* was selected as the appropriate survey instrument to assess respondents’ trait-like motivational dispositions. The researcher contacted Dr. Sara Finney at the Center for Assessment and Research Studies at James Madison University and obtained permission to incorporate the items into the *Undergraduate Survey of Classroom Features and Student Motivation*. Two of the items were modified for the present investigation. Specifically, the phrase “compared to other students” was added to item number five in order to maintain the distinction between absolute/intrapersonal and normative standards that is implicitly acknowledged in the classic conceptualization of achievement motivation (Elliot & McGregor, 2001). In addition, the wording of item number nine was modified from “I am definitely concerned that I may not learn all that I can this semester” to “Not learning all that I can this semester is something that definitely concerns me.” This revision was made in order to better differentiate the item from one of the other mastery-avoidance items. The final 12 achievement goal statements and the corresponding factor structures included on the *Undergraduate Survey of Classroom Features and Student Motivation* are presented in Appendix B. The order of items on the questionnaire parallels the randomized sequence established by Finney and colleagues (2004) as follows: 1, 4, 10, 7, 2, 11, 5, 12, 8, 3, 9, and 6.

Part II: The Classroom Learning Environment.

Self-report surveys have been the general method of choice for measuring students' perceptions of classroom goal structures and other features of the classroom learning environment. Such an approach imposes "theoretically driven, a priori assumptions, categories, or measures on the data that may constrain the extent of findings" (Patrick, 2004, p. 247). Other studies have triangulated students' survey responses with observers' perceptions and recordings of teacher discourse. However, as Patrick (2004) and Blumenfeld (1992) point out, there is still a need for students to be asked more directly about their appraisals. Consequently, the present study incorporated open-ended survey questions to inductively identify and describe student perspectives on the features of the classroom context that influence their level of academic motivation. Specifically, Part II of the questionnaire asked participants to respond to two open-ended questions that solicited their authentic perspectives about the kinds of classrooms in which they feel most and least academically motivated. First, reflecting on the on-campus classes they were currently taking, participants were asked to describe three to four classroom features that they felt had the greatest *positive* influence on their level of academic motivation by completing the sentence: "I am most motivated when..." Second, reflecting on the same on-campus classes, participants were asked to describe two to three features that they felt had the greatest *negative* influence on their level of academic motivation by completing the sentence: "I am least motivated when..." The researcher was interested determining whether students spontaneously identified features of the classroom learning environment that related to elements in the TARGET framework. Moreover, the researcher was interested determining whether students

spontaneously identified other dimensions of the classroom learning environment (e.g., teacher support, interaction patterns) as salient to their level of academic motivation. Due to the fact that responses to Part II of the questionnaire were open-ended, information about reliability was not appropriate.

Prior to deciding on the final version of the *Undergraduate Survey of Classroom Features and Student Motivation*, the researcher conducted a pilot test of the instrument. The pilot test was conducted in order to (a) identify errors in the questionnaire, (b) identify where the instrument may need redesign, and (c) predict possible problems that may be encountered in using the instrument. Thirteen undergraduate students pilot tested the instrument. In addition, the instrument was reviewed by four of the researcher's colleagues in the field of education and by the three members of the researcher's dissertation committee. Several adjustments to the wording of the directions and the format of the open-ended questions were made as a result of the feedback obtained from the pilot test and the reviewers.

Part III: Student Information.

The third part of the questionnaire solicited specific demographic information. Students were asked to indicate their age, gender, racial/ethnic identification, major, and current classification. In addition, students were asked to indicate their full-time or part-time status (see Appendix C for the complete questionnaire).

Data Collection

Preservice teachers enrolled in four sections of *Life in the Diverse Classroom* and three sections of *Teaching Science in the Diverse Classroom* were surveyed during the tenth and eleventh weeks of the Fall 2006 semester. Each student received an individual

clashed manila envelope that contained an Informed Consent Form and the *Undergraduate Survey of Classroom Features and Student Motivation*. Envelopes were coded in consecutive order (e.g., 001-122), as were the corresponding questionnaires. Students were told that the questionnaire would take about 15-20 minutes to complete and that participation in the research study was purely voluntary. Classroom instructors were asked to leave the room during data collection. A student's consent to participate in the study was verified by his or her completion of the questionnaire. At the end of the data collection session, students were directed to place their questionnaire back into the manila envelope. The researcher personally collected all envelopes.

Data Analysis

A mixed methods analysis was undertaken to examine the qualitative and quantitative data that was collected relative to the subsidiary research questions. As Onwuegbuzie and Teddlie (2003) have argued, a mixed methods analysis offers a more comprehensive analytical technique than does either quantitative or qualitative data analysis alone. In particular, "mixed methods data analysis allows the researcher to use the strengths of both quantitative and qualitative analysis techniques so as to understand phenomena better" (p. 353). Specifically, a four-stage mixed methodological analysis procedure was utilized in this investigation.

In Stage I of the mixed methodological analysis procedure, an inductive analytic approach was utilized to examine the responses of preservice teachers regarding their perspectives on the features of the classroom learning environment that positively and negatively influenced their level of academic motivation. Inductive analysis begins with specific observations and builds toward general patterns. That is, as Patton (2002)

describes, “categories or dimensions of analysis emerge from open-ended observations as the inquirer comes to understand patterns that exist in the phenomenon being investigated” (p. 56). Furthermore, the inductive analysis approach allows themes/categories to emerge from patterns found in the cases under investigation without presupposing in advance what the important themes/categories will be (Patton, 2002). As such, the themes/categories that emerged from the present investigation were created *a posteriori* (Witcher, Onwuegbuzie, & Minor, 2001).

Initially, to begin the process of coding the responses to the open-ended survey questions, all the respondents’ phrases, sentences, and descriptions were read. This enabled the researcher to acquire a general feeling for the responses. The researcher then began the challenge of what Guba (1978) referred to as convergence. That is, the researcher reread the responses looking for recurring regularities in the data. These regularities revealed patterns that were color coded, sorted into categories and titled. Two criteria were applied to identify several nonrepetitive, nonoverlapping categories: internal homogeneity and external heterogeneity (Patton, 2002). The first criterion concerns the extent to which the data that belong together in a specific category fit together in a meaningful way. The second criterion concerns the extent to which differences among categories are bold and transparent (Patton, 2002).

The analytical strategy of divergence (Guba, 1978) was also applied throughout the coding process in order to “flesh out” (Patton, 2002) the patterns or categories. Specifically, the full array of responses was reread periodically in order to ensure that (a) all sources of information had been exhausted, (b) sets of categories had been saturated so that new sources would lead to redundancy, and (c) clear, integrated regularities had

emerged (Patton, 2002). In addition, deviant cases (Patton, 2002) or outliers that did not fit the dominant patterns or categories were identified. This method of data analysis revealed a number of themes related to features of the classroom learning environment that influenced preservice teachers' level of academic motivation.

By applying the strategies of congruence and divergence, the researcher was able to identify several instances in which clusters of classroom features initially thought to be distinctive and nonoverlapping could actually be merged to form a single thematic category. For example, features pertaining to self-efficacy, confidence, and student negotiation were merged to form the single category titled *Confidence and Comfort Level*. In a similar fashion, features pertaining to course format and presentation, learning tasks, and grouping arrangements were combined to form the single category titled *Instructional Presentation and Learning Activities*.

In Stage II of the multistage mixed methodological analysis, descriptive statistics were used to analyze the hierarchical structure of the emergent themes (Witcher, Onwuegbuzie, & Minor, 2001; Minor, Onwuegbuzie, Witcher, & James, 2002; Onwuegbuzie & Teddlie, 2003). Such statistical analyses were undertaken to add greater legitimacy (e.g., credibility, trustworthiness) (Onwuegbuzie, 2001) to the findings. In particular, each theme was transformed or *quantitized* (Tashakkori & Teddlie, 1998). Specifically, for each respondent, a score of "1" was given if that theme was represented in at least one of the stated classroom features that the respondent listed; otherwise, a score of "0" was given for that theme. In other words, for each sample member, each theme was quantitized either to a score of "1" or "0", depending on whether it was represented by that individual. This binarization led to the formation of an inter-

respondent matrix (participant x theme matrix). The inter-respondent matrix indicates which individuals contributed to each emerging theme (Onwuegbuzie and Teddlie, 2003). From the inter-respondent matrix, the frequency of each identified theme was calculated. These frequencies were then converted to percentages so that the endorsement rate of each theme was determined.

Stage III involved scoring participants' responses on the 12-item goal orientation scales. Means and standard deviations for each goal orientation (mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance) were calculated. The mode and median values were also computed.

In the fourth and final stage of the mixed methodological analytic process, a series of Pearson chi-square analyses were undertaken to investigate the relationship between students' personally adopted achievement goals and their endorsement of classroom environment features. Initially, respondents were divided into two groups for each of the four achievement goal scales (MAP, MAV, PAP, PAV). Group A consisted of respondents whose mean score on a particular achievement goal measure was below the group mean. Group B consisted of respondents whose mean score on a particular achievement goal measure was equal to or greater than the group mean. That is, for each goal measure, students were assigned to Group A or Group B according to how their individual mean score related to the group mean. Next, a Goal X Theme matrix was constructed. Specifically, for each respondent who did endorse a particular category of classroom features, a score of "0" was given if the respondent's mean score on an achievement goal scale was below the group mean; if the respondent's score on a particular achievement goal scale was equal to or greater than the group mean, a score of

“1” was given. A similar Goal X Theme matrix was constructed to represent the number of students in Group A and Group B who did not endorse a particular category of classroom features. Totals were computed for each of the four achievement goal measures and these tallies were reflected in a series of 2 x 2 Goal X Theme contingency tables. Two-way chi-square tests of independence were then calculated to examine the relationships among the variables. Chi-square analyses were conducted for each of the three categories of classroom features identified as having the greatest positive influence on student motivation (*Instructional Presentation and Learning Activities, Personal Relevance and Interest, Instructor Support and Personalization*) and for *Evaluation Methods*, the third most highly endorsed category of classroom features identified as having a negative influence on academic motivation. A summary of the four-stage mixed methodological analysis procedure utilized in this investigation is presented in Table 3.

Table 3

Summary of Multi-Stage Mixed Methodological Data Analysis Process

Stage	Data Analysis Process
I	Inductive analytic approach utilized to examine responses to open-ended questions; coding and categorizing of responses; major themes identified
II	Descriptive statistics used to analyze the hierarchical structure of the emergent themes; inter-respondent matrix constructed; prevalence (endorsement) rates calculated
III	Scoring of responses to achievement goal items; means and standard deviations calculated; modes and median scores computed
IV	Series of Pearson chi-square analyses undertaken to examine the relationship between respondents' personally endorsed achievement goals and features of the classroom context cited as having the greatest positive/negative influence on level of academic motivation

CHAPTER IV

Data Analysis and Findings

Introduction

This chapter presents an analysis of the data and a discussion of the findings, following the research design and methodology described in the proceeding chapter. The chapter begins with a demographic breakdown of the participants. This is followed by a discussion of the central findings as they pertain to each of the three subsidiary research questions.

Sample Characteristics

Participants in this study included 122 preservice teachers attending a small, private four-year East Coast institution. Students were recruited from several sections of *Life in the Diverse Classroom* and *Teaching Science in the Diverse Classroom*. Participation in the study involved completing a three-part questionnaire that was administered during the tenth and eleventh weeks of the Fall 2006 semester. Part III of survey instrument solicited demographic data including: age, gender, race/ethnicity, classification, major, and part-time/full-time status. Overall, the participants were of traditional college age (95.1%), predominantly female (91.7%), White (83.5%) and attending the university on a full-time basis (99.2%). A total of 41 % of the participants were sophomores, 50 percent the students were juniors, and 9 percent were seniors. The majority of the participants were elementary education/special education majors (88.52%); 12 students (9.84%) were pursuing a major in special education/speech-language pathology; and 2 students (1.64%) were elementary education majors.

Thematic Analysis of Responses to Open-Ended Questions.

Following the inductive analytic approach detailed in Chapter III, participants' responses to the two open-ended survey questions were coded and categorized. Reported classroom learning environment features having an influence on students' academic motivation clustered into the following eleven categories: (a) Organization and Clarity; (b) Instructional Presentation and Learning Activities; (c) Shared Control and Critical Voice; (d) Evaluation Methods; (e) Workload and Timelines; (f) Instructor Support and Personalization; (g) Instructor Knowledge, Competence, and Enthusiasm; (h) Cooperation and Affiliation; (i) Personal Relevance and Interest; (j) Confidence and Comfort Level; and (k) Other Instructor Attributes. As Figure 3 illustrates, these categories of features pertain to the three major interrelated dimensions of the classroom learning environment: *student*, *teacher*, and *course*. Table 4 presents the eleven categories that emerged from the data analysis and a brief definition for each category. These definitions are designed to encapsulate the essence of each cluster of classroom features.

INSTRUCTOR

Support and Personalization
Knowledge, Competence, and
Enthusiasm
Other Attributes

STUDENT

Confidence and Comfort Level
Personal Relevance and Interest
Shared Control and Critical Voice
Cooperation and Affiliation

COURSE

Organization and Clarity
Presentation and Learning Activities
Evaluation Methods
Workload and Timelines

Figure 3. Categories of identified classroom learning environment features.

Table 4

Definitions of Identified Classroom Learning Environment Features

No.	Category of Features	Definition
1	Organization & Clarity	Extent to which learning objectives are made clear; extent to which students know what is expected of them; extent to which classes are well-organized and follow a clear sense of direction
2	Instructional Presentation & Learning Activities	Extent to which instructor uses lecture or more interactive teaching methods; extent to which learning tasks and activities are hands-on and actively engage students in the learning process
3	Shared Control & Critical Voice	Extent to which students are invited to shared with the instructor's control of the learning environment; extent to which students feel that it is legitimate and beneficial to question the teacher's pedagogical plans and methods; extent to which students feel free to voice their own opinions
4	Evaluation Methods	Methods used to monitor and assess learning
5	Workload & Timelines	Extent to which the workload, place of instruction, and time allotted to complete work is appropriate
6	Instructor Support & Personalization	Extent of help, support, and encouragement the instructor directs toward students; extent to which instructor takes a personal interest in their students and shows genuine concern for their well-being
7	Instructor Knowledge, Competence, & Enthusiasm	Extent to which instructor is viewed as a master of his/her content; extent to which instructor is competent; extent to which the instructor is enthusiastic about the content
8	Cooperation & Affiliation	Extent to which students know, help and are supportive of one another; extent to which students like and interact positively with one another; extent to which students feel accepted by their peers and their instructor

Table 4 (continued)

No.	Category of Features	Definition
9	Personal Relevance & Interest	Extent to which students feel there is a connection to career goals and out-of-school experiences; extent to which the subject matter appeals to and is of interest to students
10	Confidence & Comfort Level	Extent to which students are confident they can meet course expectations; extent to which students are comfortable with the course material; extent to which students are able to meet their personal achievement goals
11	Other Instructor Attributes	Extent to which students favor the personality and general disposition of the instructor; extent to which the instructor behaves in an ethical manner; extent to which the instructor is well-tempered

Subsidiary Research Question # 1

The first subsidiary question posed in this investigation sought to identify the features of the classroom learning environment that students viewed as having the greatest positive influence on their level of academic motivation. Once the major themes were identified, descriptive statistics were used to analyze the hierarchical structure of the emergent categories. An inter-respondent matrix (Participant X Theme matrix) was generated to calculate the frequency of each cluster (category) of classroom features identified by respondents. These frequencies were then converted to percentages so that the endorsement rate of each cluster could be determined.

As Table 5 reflects, *Instructional Presentation and Learning Activities* received the greatest endorsement (68.85%). Specifically, over two-thirds of the students noted one or more features represented in this category. *Personal Relevance and Interest* features were endorsed by almost half (49.18%) of the students, making this the second

most highly endorsed category of classroom features. *Instructor Support and Personalization* was the next most commonly cited category, with approximately one third (33.61%) of students identifying one or more features in this area. Over twenty percent of students identified features pertaining to *Instructor Knowledge, Competence, and Enthusiasm* (22.13%) and *Evaluation Methods* (21.31%). Approximately one fifth (20.49%) of preservice teachers cited features pertaining to their own *Confidence and Comfort Level*. Similarly, *Organization and Clarity* received an endorsement rate of nearly twenty percent of students (19.67%). Less frequently endorsed categories included *Cooperation and Affiliation* (13.93%) and *Shared Control and Critical Voice* (11.48%). Finally, *Workload and Timelines* (9.84%) and *Other Instructor Attributes* (8.20%) were the categories that received the lowest endorsements – with less than ten percent of students identifying features in these areas.

Table 5

Themes and Endorsement Rates for Classroom Features Having a Positive Influence

No.	Category of Features	Endorsement Rate(%)
2	Instructional Presentation & Learning Activities	68.85
9	Personal Relevance & Interest	49.18
6	Instructor Support & Personalization	33.61
7	Instructor Knowledge, Competence, & Enthusiasm	22.13
4	Evaluation Methods	21.31
10	Confidence & Comfort Level	20.49
1	Organization & Clarity	19.67
8	Cooperation & Affiliation	13.93
3	Shared Control & Critical Voice	11.48
5	Workload & Timelines	9.84
11	Other Instructor Attributes	8.20

Instructional Presentation and Learning Activities, the most highly endorsed category of classroom features, reflects the extent to which the instructor uses interactive teaching methods and the extent to which learning tasks and activities are ‘hands-on’ and actively engage students in the learning process. Preservice teachers reported being positively motivated in classrooms where the format includes opportunities for discussion and interaction, where there are flexible grouping arrangements, and where they are involved in creative, hands-on tasks. This category of classroom features is best typified by comments such as “provided with activities and other forms of teaching besides lectures, there is a fun group project involved, the learning environment is interactive, the class work involves hands-on interesting activities, there are many opportunities to participate,” and “we are encouraged to work with our peers.”

Personal Relevance and Interest, the second most highly endorsed cluster of classroom features, reflects the extent to which students feel there is a connection to career goals and real life experiences, as well as the extent to which the subject matter appeals to and is of interest to the student. Preservice teachers who endorsed this category of features reported being motivated when they felt the course material was directly applicable to their roles and responsibilities as future teachers or when they were interested in the subject matter. Examples indicative of this category include “I know I need class material for real life application, I am interested in the subject matter, the work is very relevant to my professional development, I am in a class that I will use in my career,” and “teachers give us assignments we can use in the future as teachers.”

The third most highly endorsed cluster of classroom features, *Instructor Support and Personalization*, reflects the extent to which the instructor provides the student with

help, support, and encouragement. Additionally, this category reflects the extent to which the instructor takes a personal interest in their students and shows genuine concern for their well-being. Preservice teachers reported being positively motivated when an instructor made him or herself available for help, got to know their students on a personal level, and was interested in seeing their students do well. Verbatim examples indicative of this category of classroom features include “my teacher seems to concern him or herself with my educational needs, the professor is understanding of the complications that may arise and effect when my work is handed in, the professor is approachable and willing to help me if I need it,” and “the teacher seems open and available in and out of the classroom.”

Instructor Knowledge, Competence, and Enthusiasm and Evaluation Methods ranked as the fourth and fifth most endorsed categories of classroom features, respectively. Preservice teachers reported being motivated in classes where the instructor knows his or her subject and can communicate this knowledge effectively. An instructor who is enthusiastic and passionate about the material was also identified as a motivating factor. Verbatim responses indicative of this category include “I have a competent, enthusiastic, great role model teacher” and “It is obvious that my teacher loves the subject being taught.” With regard to evaluation methods, preservice teachers reported being more positively motivated when there are multiple and varied forms of assessment, when grading practices seem fair, and when feedback is timely and constructive. Two indicative examples are “I know I will be assessed fairly on what I am studying” and “the final grade of the class is dependent upon a few grades that are similarly weighted rather than one large assignment or many small assignments.”

Confidence and Comfort Level ranked sixth among the categories of classroom features endorsed by preservice teachers as having the greatest positive influence on their level of academic motivation. This cluster of features reflects the extent to which students are confident they can meet course expectations and the extent to which students are comfortable with the course material. The extent to which students feel they are able to meet their personal achievement goals is also included in this category. A sample of responses includes “I know I am understanding the material” and “I did really well on a previous assignment, quiz, or test, so I have confidence to perform.”

The categories *Organization and Clarity* and *Cooperation and Affiliation* ranked seventh and eighth among the clusters of features endorsed by preservice teachers. Those who cited features in the first category reported being most motivated when learning objectives and course expectations are made clear and classes are well-organized. “I know exactly what is expected of me” and “the material is presented in an organized manner and easy to follow” are two examples. *Cooperation and Affiliation* refers to the extent to which students know one another, are supportive of one another, and generally feel accepted by their peers and instructor. A sample of responses includes “the students in my class are friendly” and “students and teachers work together.”

The final three endorsed categories of classroom features were *Shared Control and Critical Voice*, *Workload and Timelines*, and *Other Instructor Attributes*. The first category reflects the extent to which students are invited to share with the instructor’s control of the learning environment and the extent to which students feel free to voice their own opinions. Verbatim examples include “we are allowed to choose a topic of interest for certain assignments” and “teachers are open and will to listen to all opinions.”

The elements reflected in the second category, *Workload and Timelines*, include the extent to which the workload is manageable and deadlines are regularly distributed and reasonable. A sample of responses in this category includes “I have set deadlines and assignments that are due weekly as opposed to ongoing assignments” and “appropriate amounts of time are allotted for course work.” The last category, *Other Instructor Attributes*, reflects the extent to which students favor the personality and general disposition of the instructor. The extent to which the instructor behaves in a well-tempered and ethical manner is also included. Two verbatim examples are “my professor is open-minded and respectful – not sarcastic and rude” and “My professor speaks to the students in a relaxed, welcoming tone.”

Table 6 highlights key elements included in each of the eleven categories of classroom features and provides a sample of indicative responses. It should be noted that several deviant responses were identified during the inductive analysis of the responses generated from the first open-ended survey question. These outliers did not fit the dominant patterns or categories that emerged and were not included in the frequency count. Specific examples include “keep my mind off other things, I am not stressed,” and “my peers seem motivated as well.”

Table 6

Key Elements and Indicative Examples Pertaining to Positive Influences

Category of Features	Elements	Indicative Examples
Organization & Clarity	Instructor provides a complete and detailed syllabus; course goals/objectives are clear; presentation is well-organized; evident connection between assignments, assessments, material presented in class, and course goals	<ul style="list-style-type: none"> • “Lessons and assignments go along with each other.” • “I know exactly what is expected of me.” • “The material is presented in an organized manner and easy to follow.”
Instructional Presentation & Learning Activities	Class format includes opportunities for discussion and interaction; flexible grouping arrangements; hands-on activities; innovative and creative tasks and assignments	<ul style="list-style-type: none"> • “The professor uses a variety of teaching methods, not only lectures and PowerPoint in every class.” • “We are encouraged to work in groups with our peers.”
Shared Control & Critical Voice	Students are able to choose own topics of interest; students are able to select peers to work with; students can voice own opinions	<ul style="list-style-type: none"> • “We are allowed to choose a topic of interest for certain assignments.” • “Teachers are open and willing to listen to all opinions.”
Evaluation Methods	Instructor provides opportunities for review; assessments are varied; grading is fair; feedback is timely and constructive	<ul style="list-style-type: none"> • “I know I will be assessed fairly on what I am studying.” • “The final grade of the class is dependent upon a few grades that are similarly weighted rather than one large assignment or many small assignments.”
Workload & Timelines	Workload is manageable; deadlines are regularly distributed and reasonable; students can work at own pace	<ul style="list-style-type: none"> • “I have set deadlines and assignments that are due weekly as opposed to on-going assignments.” • “Appropriate amounts of time are allotted for course work.”

Table 6 (continued)

Category of Features	Elements	Indicative Examples
Instructor Support & Personalization	Instructor interested in students; makes himself/herself available for help; interested in seeing students do well; gets to know students on a personal level	<ul style="list-style-type: none"> • "My teacher shows me how much she/he cares about the class." • "The teacher is very open and willing to help."
Instructor Knowledge, Competence, & Enthusiasm	Instructor knows subject and can communicate this knowledge effectively; instructor is passionate about material; instructor is inspiring, engaging, energetic, and dynamic	<ul style="list-style-type: none"> • "I have a competent, enthusiastic, great role model teacher." • "It is obvious that my teacher loves the subject being taught."
Cooperation & Affiliation	Atmosphere is comfortable; students support one another in the learning process; students and teachers work together; peers are friendly	<ul style="list-style-type: none"> • "The students in my class are friendly." • "Students and teachers all work together."
Personal Relevance & Interest	Material is related to career goals and can be applied to real life situations; student is interested in content being presented	<ul style="list-style-type: none"> • "The material in class relates to my major and career goal." • "I am interested in the topic."
Confidence & Comfort Level	Student acquires an understanding of the material; student effort pays off	<ul style="list-style-type: none"> • "I know I am understanding the material." • "I did really well on a previous assignment, quiz, or test, so I have confidence to perform."
Other Instructor Attributes	Instructor demonstrates well-tempered behavior; instructor is kind and respectful	<ul style="list-style-type: none"> • "My professor is open-minded and respectful - not sarcastic and rude." • "My professor speaks to the students in a relaxed, welcoming tone."

To summarize, *Instructional Presentation and Learning Activities* (68.85%), *Personal Relevance and Interest* (49.18%), and *Instructor Support and Personalization* (33.61 %) were found to be the top three categories of classroom features cited by preservice teachers as having a greatest positive influence on their level of academic motivation. In general, preservice teachers favored classes that were interactive and incorporated a variety of hands-on activities. The opportunity to work in groups with peers was also rated as a positive feature. In addition, students favored classes in which they felt the course material was directly connected to their personal career goals and real-life experiences. Having a personal interest in the subject material was also endorsed as a positive factor. With regard to their instructors, preservice teachers favored instructors who were encouraging, caring and concerned, offered help, and took a personal interest in the well-being of their students.

Subsidiary Research Question #2

The second subsidiary question posed in this investigation sought to identify the features of the classroom learning environment that students viewed as having the greatest negative influence on their level of academic motivation. Once again, a process of inductive analysis was employed to identify the major themes that emerged from preservice teachers' responses to the second open-ended survey question. Descriptive statistics were then used to analyze the hierarchical structure of the emergent categories. An inter-respondent matrix (participant X theme matrix) was generated to calculate the frequency of each cluster (category) of classroom features identified by respondents. These frequencies were then converted to percentages so that the endorsement rate of each cluster could be determined.

As reflected in Table 7, features having to do with *Instructional Presentation and Learning Activities* received the greatest endorsement (57.38%) with more than one half of students citing one or more of the features included in this category. Greater than one quarter of student responses fell into the categories of *Instructor Support and Personalization* (26.23%) and *Evaluation Methods* (25.41%), making these two clusters of features the second and third most highly endorsed categories. Over twenty percent of students (23.77%) identified features pertaining to *Instructor Knowledge, Competence, and Enthusiasm*. Similarly, over twenty percent of students (23.77%) cited classroom features aligned with *Personal Relevance and Interest*. The categories of *Workload and Timelines* and *Organization and Clarity* received endorsement rates of 22.95% and 22.13%, respectively. Slightly more than fifteen percent (15.57%) of preservice teachers endorsed features pertaining to their own *Confidence and Comfort Level*. Features cited as having the least negative influence on preservice teachers' level of academic motivation included *Other Instructor Attributes* (7.38%), *Shared Control and Critical Voice* (5.74%), and *Cooperation and Affiliation* (4.92%).

The inductive analysis revealed that responses to the second open-ended question were, in many instances, inversions of those provided in response to the first open-ended question. For example, a common response to the prompt "I am most motivated when..." was "there are hands-on activities." Alternatively, a common response to the prompt "I am least motivated when..." was "There are no hands-on activities." Similarly, "The teacher seems open and available in and out of the classroom" was offered in response to the prompt "I am most motivated when..." whereas "The teacher is unavailable to meet with me" was offered in response to the prompt "I am least motivated

when...” As the discussion would be repetitive, the findings with regard to the second open-ended survey question will not be presented in great detail. Rather, this section will highlight the findings pertinent to the top three most highly endorsed categories of classroom features cited as having the greatest negative influence on student motivation.

Table 7

Themes and Endorsement Rates for Classroom Features Having a Negative Influence

No.	Category of Features	Endorsement Rate (%)
2	Instructional Presentation & Learning Activities	57.38
6	Instructor Support & Personalization	26.23
4	Evaluation Methods	25.41
7	Instructor Knowledge, Competence, & Enthusiasm	23.77
9	Personal Relevance & Interest	23.77
5	Workload & Timelines	22.95
1	Organization & Clarity	22.13
10	Confidence & Comfort Level	15.57
11	Other Instructor Attributes	7.38
3	Shared Control & Critical Voice	5.74
8	Cooperation & Affiliation	4.92

Instructional Presentation and Learning Activities was the most highly endorsed category. Preservice teachers reported being less motivated when the presentation is predominantly lecture and there are few hands-on activities. In addition, preservice teachers reported being less motivated in classes where there are few opportunities for student-teacher and student-student interactions. Responses representative of this category include “the classes are boring with just lecture and no lively discussion, there is no questioning to stimulate thought, “professors read straight from the text with no visuals or manipulations during the class,” and “there is no class participation, interaction between professor and students, or group activities.” With regard to the second most

highly endorsed category, *Instructor Support and Personalization*, preservice teachers reported being less motivated when the instructor did not make him or herself available to students and when the instructor makes no effort to get to know students on a more personal level. *Verbatim* examples indicative of this cluster of classroom features include “the professor does not offer help, the teacher is unapproachable if I have concerns or need help,” and “the teacher does not know who I am or shows no concern for how I do in the class.”

Evaluation Methods ranked as the third most highly endorsed category of classroom features cited by preservice teachers. Limited number and variety of assessments, unfair grading practices, lack of timely and constructive feedback, and few opportunities for review were identified as key elements. *Verbatim* examples include “there are only a few assignments during the semester, your final grade is only a reflection of a limited number of grades, I receive little to no feedback,” and “I feel the professor does not grade fairly.” Table 8 presents the key elements included in each category of classroom features, as well as a sample of indicative responses.

Several deviant responses were identified during the inductive analysis of responses to the second open-ended question. Once again, these outliers did not fit the dominant patterns or categories that emerged and were not included in the frequency count. Specific examples include “I am sick and I don’t want to be there, I hate what is going on in class,” and “I do not like the professor.”

Table 8

Key Elements and Indicative Examples Pertaining to Negative Influences

Category of Features	Elements	Indicative Examples
Organization & Clarity	Instructor does not provide a complete and detailed syllabus; course goals/objectives are not clear; instructor is disorganized and unprepared; there is no evident correlation between assignments, assessments, material presented in class, and course goals	<ul style="list-style-type: none"> • “There is no or poorly written syllabus, expectations, or notes.” • “There is no structure to the class.” • “Course requirements and calendars are unclear.”
Instructional Presentation & Learning Activities	Presentation is predominantly lecture; lack of hands-on activities; there are few opportunities for student-teacher and student-student interactions	<ul style="list-style-type: none"> • “Professors lecture and there is little student contribution.” • “A teacher just reads off of a PowerPoint and does not engage the classroom.”
Shared Control & Critical Voice	Students are not able to choose own topics of interest; students do not feel free to voice own opinions	<ul style="list-style-type: none"> • “The teacher does not accept input from students.” • “The teacher doesn’t care about the students’ thoughts or ideas.”
Evaluation Methods	Instructor provides few opportunities for review; assessments are not varied; unfair grading practices are employed; there is a lack of timely and constructive feedback	<ul style="list-style-type: none"> • “Tests do not contain information that I have worked on in previous assignments.” • “If I feel the professor does not grade fairly.”
Workload & Timelines	Workload is unmanageable; timelines are unreasonable; students cannot work at own pace	<ul style="list-style-type: none"> • “I am overloaded with assignments; I’m afraid too much at one time won’t allow me to do my best with everything.” • “I am overwhelmed with the short amount of time I have to complete multiple assignments.”

Table 8 (continued)

Category of Features	Elements	Indicative Examples
Instructor Support & Personalization	Instructor does not make himself/herself available to students; instructor makes no effort to get to know students on a more personal level	<ul style="list-style-type: none"> • “The teacher does not know who I am or shows no concern for how I do in the class.” • “The teacher is unavailable to meet with.”
Instructor Knowledge, Competence, & Enthusiasm	Instructor does not seem to know subject; instructor has difficulty communicating knowledge effectively; instructor is not passionate about material; instructor is boring	<ul style="list-style-type: none"> • “Professors view their profession as merely a job.” • “The teacher doesn’t know how to teach.” • “The teacher isn’t enthusiastic about the material.”
Cooperation & Affiliation	Atmosphere is uncomfortable and unfriendly; students do not support one another in the learning process	<ul style="list-style-type: none"> • “Students are unfriendly, disrespectful.” • “I feel intimidated by the teacher or classmates.”
Confidence & Comfort Level	Course material is too easy or too difficult; student effort does not pay off	<ul style="list-style-type: none"> • “I don’t understand the material.” • “The class confuses me or is too easy.”
Personal Relevance & Interest	Material is unrelated to career goals and cannot be applied to real life situations; instructional presentation and learning activities do not hold student interest	<ul style="list-style-type: none"> • “The material is unrelated to my major or intended career path.” • “Teachers give pointless assignments.” • “The subject is not interesting.”
Other Instructor Attributes	Instructor does not demonstrate well-tempered behavior; instructor does not behave in a kind and respectful manner	<ul style="list-style-type: none"> • “The teacher seems uncomfortable, awkward, confusing, egotistical, close- minded.” • “The professor is unpleasant and harsh.”

In sum, preservice teachers reported feeling less motivated in classes where the instructional presentation was predominantly lecture and where was little to no opportunity for teacher-student or student-student interaction. Several respondents commented on the overuse of PowerPoint as a de-motivator. Preservice teachers also reported feeling less motivated in classes where the instructor did not make him or herself available to students, made little effort to get to know students on a more personal level, and was generally perceived as showing little concern for their students' well-being. The methods used to monitor and assess learning also influenced preservice teachers' level of academic motivation. Preservice teachers reported feeling less motivated in classes where (a) the instructor provided few opportunities for review, (b) assessments were not varied, (c) there was a lack of constructive and timely feedback, and (d) according to student perception, unfair grading practices were employed.

Subsidiary Research Question #3

The third subsidiary question posed in this investigation was two-fold. First it sought to identify the achievement goals most strongly endorsed by students. Second it sought to examine the extent to which there was an association between students' personally endorsed achievement goals and their perspectives about the motivating features of the classroom learning environment.

Preservice teachers' achievement goals were assessed with a 12-item likert-type scale designed to measure personal mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goal orientations. A mastery-approach orientation (MAP) reflects a focus on attaining positive possibilities such as acquiring new skills and improving one's competence. A mastery-avoidance orientation (MAV) reflects a focus

on avoiding negative possibilities such as losing skills or becoming incompetent. A performance-approach orientation (PAP) reflects a focus on the attainment of favorable judgments of competence and ability. A performance-avoidance orientation (PAV) reflects a focus on avoiding unfavorable judgments of competence and ability.

Preservice teachers were directed to rate their goal orientation for the current semester.

The means, standard deviations, and ranges (possible and observed) for each of the achievement goal measures are reported in Table 9. Regarding personally adopted achievement goals, preservice teachers reported pursuing mastery-approach goals the most ($M = 5.76$, $SD = 1.16$), followed by performance-approach goals ($M = 4.60$, $SD = 1.55$), followed by mastery-avoidance goals ($M = 4.13$, $SD = 1.31$). Although the mean for performance-avoidance goals was at the scale midpoint, it was lower than the means for each of the other goal measures ($M = 4.00$, $SD = 1.49$).

The mode was calculated for each of the 12 achievement goal statements. This enabled the researcher to observe the value of the most frequently selected rating on the likert-type items. When grouped according to goal orientation, the most frequently occurring values were as follows: MAP= 7, MAV = 4, PAP= 5, PAV= 4. The median or middle most value was also computed for each of the 12 achievement goal statements. When grouped according to goal orientation, the median values were as follows: MAP= 4, MAV = 4, PAP= 5, PAV= 5. Results for the three measures of central tendency are summarized in Table 10. Overall, the distributions were not skewed.

Table 9

Descriptive Statistics for Achievement Goals

Variable	Possible range	Observed range	<i>M</i>	<i>SD</i>
Mastery-approach	1-7	2.3 – 7.0	5.76	1.18
Mastery-avoidance	1-7	1.3 – 7.0	4.13	1.31
Performance-approach	1-7	1.0 – 7.0	4.60	1.55
Performance-avoidance	1-7	1.0 – 7.0	4.00	1.49

Note. *N* = 122

Table 10

Measures of Central Tendency and Variability

Variable	Mode	Median	Mean	<i>SD</i>
Mastery-approach	7	4	5.76	1.18
Mastery-avoidance	4	4	4.13	1.31
Performance-approach	5	5	4.60	1.55
Performance-avoidance	4	5	4.00	1.49

Note. *N* = 122

A series of Pearson chi-square tests of independence were undertaken to investigate the relationship between students' personally endorsed achievement goals and their perspectives on classroom features. In order to conduct the chi-square analyses, preservice teachers were divided into two groups for each of the four achievement goal measures. Group A consisted of respondents whose mean score on a particular achievement goal measure was below the group mean. Group B consisted of respondents whose mean score on a particular achievement goal measure was equal to or greater than the group mean. Raw scores were tabulated for students in each group who did and did not identify a particular category of classroom features. Four hypotheses were posed for each of the three categories of classroom features identified as having the greatest

positive influence on student motivation and for one of the categories of classroom features identified as having the greatest negative influence. The null hypotheses were tested at $p < .05$ level of significance.

*Goal * Theme X² Analyses: Instructional Presentation and Learning Activities.*

The first series of Pearson chi-square analyses tested the following null hypotheses with regard to the category of classroom features titled *Instructional Presentation and Learning Activities*:

- H₀: There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled *Instructional Presentation and Learning Activities*.
- H₁: There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled *Instructional Presentation and Learning Activities*.
- H₂: There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled *Instructional Presentation and Learning Activities*.
- H₃: There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled *Instructional Presentation and Learning Activities*.

The SPSS printouts for this first set chi-square analyses are found in Tables 11 to 14. With regard to the first null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAP scores and thematic endorsement. No significant relationship was found ($\chi^2(1) = .751, p < .05$). MAP scores and endorsement of this category of classroom features appear to be independent. With regard to the second null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAV scores and thematic endorsement. No significant relationship was found ($\chi^2(1) = .903, p < .05$). MAV scores and endorsement of this category of classroom features appear to be independent. With regard to the third null hypothesis, a chi-square test of independence was calculated comparing higher and lower PAP scores and thematic endorsement. Once again, no significant relationship was found ($\chi^2(1) = .964, p < .05$). PAP scores and endorsement of this category of classroom features appear to be independent. Finally, a chi-square test of independence was calculated to test the fourth null hypothesis. No significant relationship was found ($\chi^2(1) = .316, p < .05$). PAV scores and endorsement of this category of classroom features appear to be independent. Table 15 provides a summary of the results for this set of chi-square analyses.

Table 11

X^2 Test of Independence – Instructional Presentation and Learning Activities * MAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.101(b)		.751		
Continuity Correction (a)	.014		.905		
Likelihood Ratio	.101		.751		
Fisher's Exact Test				.844	.451
Linear-by-Linear Association	.100		.752		
N of Valid Cases	122				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.20.

Table 12

X^2 Test of Independence – Instructional Presentation and Learning Activities* MAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.015(b)		.903		
Continuity Correction (a)	.000		1.000		
Likelihood Ratio	.015		.903		
Fisher's Exact Test				1.000	.529
Linear-by-Linear Association	.015		.903		
N of Valid Cases	122				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.69.

Table 13

X^2 Test of Independence –Instructional Presentation and Learning Activities * PAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.002(b)		.964		
Continuity Correction (a)	.000		1.000		
Likelihood Ratio	.002		.964		
Fisher's Exact Test				1.000	.559
Linear-by-Linear Association	.002		.964		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.89.

Table 14

X^2 Test of Independence –Instructional Presentation and Learning Activities* PAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.007(b)		.316		
Continuity Correction (a)	.651		.420		
Likelihood Ratio	1.005		.316		
Fisher's Exact Test				.334	.210
Linear-by-Linear Association	.998		.318		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.44.

Table 15

Summary of Chi-Square Analyses – Instructional Presentation and Learning Activities

Hypothesis	Results
There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	$(\chi^2(1) = .751, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	$(\chi^2(1) = .903, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	$(\chi^2(1) = .964, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	$(\chi^2(1) = .316, p < .05)$ Null hypothesis is not rejected.

*Goal * Theme X² Analyses: Personal Relevance and Interest.*

The second series of Pearson chi-square analyses tested the following null hypotheses with regard to the category of classroom features titled *Personal Relevance and Interest*:

- H_0 : There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled *Personal Relevance and Interest*.

- H₁: There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled *Personal Relevance and Interest*.
- H₂: There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled *Personal Relevance and Interest*.
- H₃: There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled *Personal Relevance and Interest*.

The SPSS printouts for this second set of chi-square analyses are presented in Tables 16 to 19. With regard to the first null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAP scores and thematic endorsement. A significant interaction was found ($\chi^2(1) = .047, p < .05$). There appears to be a relationship between MAP scores and endorsement of this category of classroom features. With regard to the second null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAV scores and thematic endorsement. Once again a significant interaction was found ($\chi^2(1) = .046, p < .05$). There appears to be a relationship between MAV scores and endorsement of this category of classroom features. With regard to the third null hypothesis, a chi-square test of independence was calculated comparing higher and lower PAP scores and thematic endorsement. No significant relationship was found ($\chi^2(1) = .258, p < .05$). PAP scores and endorsement of this category of classroom features appear to be independent. Finally, a chi-square test of independence was calculated to test the fourth null hypothesis. No significant

relationship was found ($\chi^2 (1) = .575, p < .05$). PAV scores and endorsement of this category of classroom features appear to be independent. Table 20 summarizes the data for this set of chi-square analyses.

Table 16

X² Test of Independence – Personal Relevance and Interest MAP*

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.948(b)	1	.047		
Continuity Correction (a)	3.254	1	.071		
Likelihood Ratio	3.970	1	.046		
Fisher's Exact Test				.067	.035
Linear-by-Linear Association	3.916	1	.048		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.57.

Table 17

*X² Test of Independence – Personal Relevance and Interest * MAV*

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.981(b)	1	.046		
Continuity Correction (a)	3.291	1	.070		
Likelihood Ratio	4.003	1	.045		
Fisher's Exact Test				.049	.035
Linear-by-Linear Association	3.949	1	.047		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 29.51.

Table 18

X^2 Test of Independence – Personal Relevance and Interest* PAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.280(b)		.258		
Continuity Correction (a)	.899		.343		
Likelihood Ratio	1.283		.257		
Fisher's Exact Test				.276	.172
Linear-by-Linear Association	1.270		.260		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.08.

Table 19

X^2 Test of Independence – Personal Relevance and Interest* PAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.314(b)		.575		
Continuity Correction (a)	.143		.705		
Likelihood Ratio	.314		.575		
Fisher's Exact Test				.591	.353
Linear-by-Linear Association	.311		.577		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.54.

The third series of Pearson chi-square analyses tested the following null

Table 20

Summary of Chi-Square Analyses – Personal Relevance and Interest

Hypothesis	Results
There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	($\chi^2(1) = .047, p < .05$) Null hypothesis is rejected.
There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	($\chi^2(1) = .046, p < .05$) Null hypothesis is rejected.
There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	($\chi^2(1) = .258, p < .05$) Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled <i>Instructional Presentation and Learning Activities</i> .	($\chi^2(1) = .575, p < .05$) Null hypothesis is not rejected.

*Goal * Theme X² Analyses: Instructor Support and Personalization.*

The third series of Pearson chi-square analyses tested the following null hypotheses with regard to the category of classroom features titled *Instructor Support and Personalization*:

- H₀: There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled *Instructor Support and Personalization*.

- H₁: There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled *Instructor Support and Personalization*.
- H₂: There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled *Instructor Support and Personalization*.
- H₃: There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled *Instructor Support and Personalization*.

The SPSS printouts for this third set of chi-square analyses are presented in Tables 21 to 24. With regard to the first null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAP scores and thematic endorsement. No significant relationship was found ($\chi^2(1) = .255, p < .05$). MAP scores and endorsement of this category of classroom features appear to be independent. With regard to the second null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAV scores and thematic endorsement. No significant relationship was found ($\chi^2(1) = .180, p < .05$). MAV scores and endorsement of this category of classroom features appear to be independent. With regard to the third null hypothesis, a chi-square test of independence was calculated comparing higher and lower PAP scores and thematic endorsement. Once again, no significant relationship was found ($\chi^2(1) = .266, p < .05$). PAP scores and endorsement of this category of classroom features appear to be independent. Finally, a chi-square test of independence was calculated to test the fourth null hypothesis. No significant relationship was found ($\chi^2(1)$

Table 22

= .402, $p < .05$). PAV scores and endorsement of this category of classroom features appear to be independent. The results for this set of chi-square analyses are summarized in Table 25.

Table 21

X^2 Test of Independence –Instructor Support and Personalization * MAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.800(b)	1	.180		
Continuity Correction (a)	1.322	1	.250		
Likelihood Ratio	1.807	1	.179		
Fisher's Exact Test				.250	.125
Linear-by-Linear Association	1.785	1	.181		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.50.

Table 22

X^2 Test of Independence – Instructor Support and Personalization * MAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.800(b)	1	.180		
Continuity Correction (a)	1.322	1	.250		
Likelihood Ratio	1.807	1	.179		
Fisher's Exact Test				.250	.125
Linear-by-Linear Association	1.785	1	.181		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.50.

Table 23

X^2 Test of Independence – Instructor Support and Personalization * PAP

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.236(b)	1	.266	
Continuity Correction (a)	.841	1	.359	
Likelihood Ratio	1.229	1	.268	
Fisher's Exact Test				.332
Linear-by-Linear Association	1.226	1	.268	.179
N of Valid Cases	122			

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.14.

Table 24

X^2 Test of Independence – Instructional Presentation and Learning Activities* PAV

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.703(b)	1	.402	
Continuity Correction (a)	.418	1	.518	
Likelihood Ratio	.702	1	.402	
Fisher's Exact Test				.445
Linear-by-Linear Association	.698	1	.404	.259
N of Valid Cases	122			

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.82.

Table 25

Summary of Chi-Square Analyses – Instructor Support and Personalization

Hypothesis	Results
There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled <i>Instructor Support and Personalization</i> .	$(\chi^2 (1) = .225, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled <i>Instructor Support and Personalization</i> .	$(\chi^2 (1) = .180, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled <i>Instructor Support and Personalization</i> .	$(\chi^2 (1) = .266, p < .05)$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled <i>Instructor Support and Personalization</i> .	$(\chi^2 (1) = .402, p < .05)$ Null hypothesis is not rejected.

Goal Theme X² Analyses: Evaluation Methods*

The final series of Pearson chi-square analyses tested the null hypotheses with regard to the category titled *Evaluation Methods*. This category ranked third among the clusters of features cited as having the greatest negative influence on academic motivation. The following four null hypotheses were posed:

- H_0 : There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled *Evaluation Methods*.

- H₁: There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled *Evaluation Methods*.
- H₂: There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled *Evaluation Methods*.
- H₃: There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled *Evaluation Methods*.

The SPSS printouts for this final set of chi-square analyses are presented in Tables 26 to 29. With regard to the first null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAP scores and thematic endorsement. No significant relationship was found ($\chi^2 (1) = .177, p < .05$). MAP scores and endorsement of this category of classroom features appear to be independent. With regard to the second null hypothesis, a chi-square test of independence was calculated comparing higher and lower MAV scores and thematic endorsement. No significant relationship was found ($\chi^2 (1) = .919, p < .05$). MAV scores and endorsement of this category of classroom features appear to be independent. With regard to the third null hypothesis, a chi-square test of independence was calculated comparing higher and lower PAP scores and thematic endorsement. Once again, no significant relationship was found ($\chi^2 (1) = .389, p < .05$). PAP scores and endorsement of this category of classroom features appear to be independent. Finally, a chi-square test of independence was calculated to test the fourth null hypothesis. No significant relationship was found ($\chi^2 (1)$

= .608, $p < .05$). PAV scores and endorsement of this category of classroom features appear to be independent. The results for this set of chi-square analyses are summarized in Table 30.

Table 26

X^2 Test of Independence – Evaluation Methods (Negative Influence)* MAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.826(b)		.177		
Continuity Correction (a)	1.302		.254		
Likelihood Ratio	1.863		.172		
Fisher's Exact Test				.210	.127
Linear-by-Linear Association	1.811		.178		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.21.

Table 27

X^2 Test of Independence – Evaluation Methods (Negative Influence) * MAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.010(b)		.919		
Continuity Correction (a)	.000		1.000		
Likelihood Ratio	.010		.919		
Fisher's Exact Test				1.000	.542
Linear-by-Linear Association	.010		.919		
N of Valid Cases	122				

a. Computed only for a 2x2 table
b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.25.

Table 28

X^2 Test of Independence – Evaluation Methods (Negative Influence)* PAP

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.741(b)	1	.389		
Continuity Correction (a)	.422		.516		
Likelihood Ratio	.735		.391		
Fisher's Exact Test				.407	.257
Linear-by-Linear Association	.734		.391		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.96.

Table 29

X^2 Test of Independence – Evaluation Methods (Negative Influence) * PAV

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.263(b)	1	.608		
Continuity Correction (a)	.093		.761		
Likelihood Ratio	.264		.607		
Fisher's Exact Test				.679	.382
Linear-by-Linear Association	.261		.609		
N of Valid Cases	122				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.23.

Table 30

Summary of Chi-Square Analyses – Evaluation Methods (Negative Influence)

Hypothesis	Results
There is no significant relationship between students with higher versus lower MAP scores and their endorsement of the category of classroom features titled <i>Evaluation Methods</i> .	$\chi^2(1) = .177, p < .05$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower MAV scores and their endorsement of the category of classroom features titled <i>Evaluation Methods</i> .	$\chi^2(1) = .919, p < .05$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAP scores and their endorsement of the category of classroom features titled <i>Evaluation Methods</i> .	$\chi^2(1) = .389, p < .05$ Null hypothesis is not rejected.
There is no significant relationship between students with higher versus lower PAV scores and their endorsement of the category of classroom features titled <i>Evaluation Methods</i> .	$\chi^2(1) = .608, p < .05$ Null hypothesis is not rejected.

Summary

In sum, with regard to personally adopted achievement goals, preservice teachers reported pursuing mastery-approach goals the most ($M = 5.76, SD = 1.18$), followed by performance-approach goals ($M = 4.60, SD = 1.55$), followed by mastery-avoidance goals ($M = 4.13, SD = 1.31$). Performance-avoidance goals were found to be the least pursued ($M = 4.00, SD = 1.49$). The series of Pearson chi-square analyses undertaken to examine the relation between preservice teachers' adopted achievement goals and classroom features endorsed as having the greatest positive influence on their level of motivation revealed that, with two exceptions, there was no significant dependence of one variable on the other. This independence pertained specifically to classroom features falling

within the top three most highly endorsed categories: *Instructional Presentation and Learning Activities*, *Personal Relevance and Interest*, and *Instructor Support and Personalization*. The null hypothesis was not supported in two instances. With regard to the category *Personal Relevance and Interest*, a significant interaction was found between students with higher and lower MAP scores and thematic endorsement. Similarly, a significant interaction was found between students with higher and lower MAV scores and thematic endorsement. Another series of Pearson chi-square analyses was undertaken to examine the relation between preservice teachers' adopted achievement goals and *Evaluation Methods*, the category of features ranked third among those cited as having the greatest negative influence on academic motivation. No significant relationship was found among the variables.

CHAPTER V

Discussion, Conclusions, and Recommendations

Introduction

This chapter explores the study's findings in more detail. The chapter begins with a summary of the problem and an overview of the research methodology that was employed. An in-depth discussion of the findings follows, with special attention being paid to how the current findings confirm or contradict those put forth in the extant literature. The third section addresses implications for teaching and learning in higher education. The chapter concludes with recommendations for future replications of this study, in light of the acknowledged limitations.

Summary of the Research Problem and Methodology

This study set out to gain an understanding of what college students view as the salient features of optimally motivating classrooms. Specifically, the study sought to identify and describe the relevant features of the college classroom context that undergraduate students distinguished as promoting and supporting academic motivation at one four-year postsecondary institution. Secondly, the study sought to examine the extent to which there was an association between the achievement goals students endorsed and their perspectives about the motivating features of the classroom learning environment.

Based on the overall objectives of the study, the investigation attempted to answer the following subsidiary research questions:

1. What features of the classroom learning environment do students identify as having the greatest positive influence on their level of academic motivation?

2. What features of the classroom learning environment do students identify as having the greatest negative influence on their level of academic motivation?
3. What achievement goals are most strongly endorsed by students and, to what extent is there an association between the achievement goals students endorse and their perspectives about the motivating features of the classroom learning environment?

The study employed a mixed methods research design using a nonprobability purposeful sample. Specifically, the sample consisted of 122 preservice teachers attending a small, private four-year East Coast university. A questionnaire containing 12 likert-type items and two open-ended questions was administered during the tenth and eleventh weeks of the Fall 2006 semester. Respondents' personally endorsed achievement goals were computed by scoring their responses to the likert-type items. Responses to the open-ended questions were coded and categorized to reveal features of the classroom learning environment that preservice teachers viewed as having the greatest positive and negative influence on their level of academic motivation. Statistical analyses were undertaken to examine the relationship between preservice teachers' personally endorsed achievement goals and their perspectives on the features of the college classroom they found optimally motivating.

Summary of Findings

A total of eleven thematic categories emerged from the inductive analysis of preservice teachers' responses to the two open-ended survey questions. Computed prevalence rates revealed that the categories *Instructional Presentation and Learning Activities* (68.85%), *Personal Relevance and Interest* (49.18%), and *Instructor Support*

and *Personalization* (33.61%) ranked as the top three most highly endorsed categories of positively motivating features. With regard to classroom features cited as having the greatest negative influence on academic motivation, *Instructional Presentation and Learning Activities* (57.38%), *Instructor Support and Personalization* (26.23%), and *Evaluation Methods* (25.41%) ranked as the top three most highly endorsed categories.

Analyses of responses to the achievement goals measures revealed that preservice teachers pursued mastery-approach goals the most often ($M = 5.76$, $SD = 1.16$), followed by performance-approach goals ($M = 4.60$, $SD = 1.55$), followed by mastery-avoidance goals ($M = 4.13$, $SD = 1.31$). Preservice teachers reported pursuing performance-avoidance goals the least often ($M = 4.00$, $SD = 1.49$). The series of Pearson chi-square analyses undertaken to examine the relationship between preservice teachers' adopted achievement goals and their perspectives on the motivating features of the college classroom revealed that, with two exceptions, there was no significant dependence of one variable on the other. This independence pertained specifically to classroom features falling within the top three most highly endorsed categories: *Instructional Presentation and Learning Activities*, *Personal Relevance and Interest*, and *Instructor Support and Personalization*. The null hypothesis was not supported in two instances. Pertaining to the category *Personal Relevance and Interest*, the interaction of students with higher versus lower MAP mean scores and their thematic endorsement was statistically significant. Similarly, the interaction of students with higher versus lower MAV scores and their thematic endorsement was statistically significant. Finally, the series of Pearson chi-square analyses undertaken to examine the relationship between preservice teachers' adopted achievement goals and *Evaluation Methods*, the category of features ranked third

among those cited as having the greatest negative influence on academic motivation, reflected no significant association between the variables.

Discussion

This section discusses the findings in greater detail. Specific attention is given to how the findings of the present study confirm or contradict those put forth in the extant literature on goal orientation theory and classroom learning environment research. Initially, the researcher will examine the eleven categories of classroom features that emerged from the inductive analysis of the data relative to this body of extant literature. Next, the researcher will examine the findings regarding the personally endorsed achievement goals of the survey respondents in relation to existing literature. Lastly, the relation of students' personally endorsed achievement goals and their perspectives on the classroom learning environment will be addressed relative to findings evidenced in extant literature.

Relation of Findings to Goal Orientation Theory - Classroom Goal Structures.

Goal orientation theory posits that the classroom context can provide messages regarding the purposes for achievement. Empirical evidence suggests that these goal structures (Ames, 1992; Maehr & Midgley, 1991) can promote a variety of adaptive or maladaptive learning related behaviors (see Ames & Archer, 1988; Kaplan & Maehr 1999; Roeser, Midgley, & Urdan, 1996; Patrick, 2004, Turner et al., 2002). The TARGET framework (Task, Authority, Recognition, Grouping, Evaluation, Time) (Epstein, 1988; Ames, 1992) has been used to represent these highly salient dimensions or structures of the classroom environment. A comparison of the eleven categories of motivating classroom features that emerged from the present study and the constellation

of classroom practices addressed in the TARGET framework revealed several similarities. In fact, congruence was demonstrated in the four of the eleven categories of classroom features that preservice teachers identified: *Instructional Presentation and Learning Activities*, *Shared Control and Critical Voice*, *Evaluation Methods*, and *Workload and Timelines*. According to the TARGET framework, the *task* dimension concerns the design of learning activities and assignments. How these tasks are introduced and presented to students has been shown to influence student motivation (Pintrich & Schunk, 2002). The *grouping* dimension refers to the various grouping arrangements teachers use in the classroom to encourage the students' ability to work effectively with others. Both of these dimensions directly correspond to features that are encompassed within *Instructional Presentation and Learning Activities*, the category of classroom features most highly endorsed by preservice teachers as having a positive influence on their level of academic motivation (68.85%).

The *authority* dimension involves the locus of responsibility in the classroom and the degree of opportunity students have to take control over learning activities and develop as sense of independence (Ames, 1992; Pintrich & Schunk, 2002). Although not nearly as strongly endorsed as the preceding category, *Shared Control and Critical Voice* did emerge as a cluster of classroom features identified by over eleven percent (11.48%) of preservice teachers. According to Ames (1992), the ways in which students are evaluated is one of the most salient features that can affect student motivation. Hence, the *evaluation* dimension involves the methods used to monitor and assess student learning. Findings from the present investigation revealed that over twenty percent of preservice teachers identified *Evaluation Methods* as having a positive (21.31%) or negative

(25.41%) impact on their academic motivation. Once again, similarity is noted between findings from the present investigation and those found in the existing literature. Lastly, according to the TARGET framework, the *time* dimension includes the appropriateness of the workload, the pace of instruction, as well as the time allotted for completing the work (Pintrich & Schunk, 2002; Deemer, 2004). Of the preservice teachers surveyed, over twenty percent (22.95%) cited issues relating to *Workload and Timelines* as having a negative influence on their level of academic motivation.

The correspondence between the current findings and the TARGET framework is reflected in Table 31. One area of divergence is noted. Whereas the *recognition* dimension is included in the TARGET framework, preservice teachers did not specifically cite the formal and informal use of rewards, incentives and praise as positively or negatively motivating factors. However, upon closer examination, it can be argued that many of these elements are in fact addressed within the categories *Evaluation Methods* (e.g., prompt and constructive feedback) and *Teacher Support* (e.g., help and encouragement). In sum, the classroom environment themes that emerged from the present study confirm the salience of several of the dimensions addressed in the TARGET framework.

Relation of Findings to Classroom Environment Research.

As indicated in the review of related literature, Moos (1979) pioneered much of the current research on educational environments. Moos identified three theoretical dimensions of the classroom's psychosocial environment: (a) the relationship dimension, (b) the personal growth or goal orientation dimension, and (c) the system maintenance or change dimension. Several of the instruments designed to assess dimensions of the

classroom learning environment are based on this theoretical framework. Analysis of responses to the open-ended questions posed in the present study support Moos's framework. Specifically, seven of the eleven categories of classroom features identified in this current investigation relate to one or more of Moos's classroom psychosocial environment dimensions. For example, the *relationship* dimension includes factors such as affiliation, teacher support, and peer cohesion. In the current study, these factors are encompassed within the categories *Instructor Support and Personalization* and *Cooperation and Affiliation*. Slightly over one-third (33.61 %) of preservice teachers endorsed instructor support and personalization as one of three categories of classroom features having the greatest positive influence on their level of academic motivation. Although not as highly endorsed, features included in the category *Cooperation and Affiliation* were cited as positively influential by close to fourteen percent (13.93%) of respondents.

Since Moos (1979) first distinguished the *Relationship* dimension of different learning environments, a number of studies have specifically investigated the social dimensions of the classroom learning environment in relation to student motivation (see Hirshy & Wilson, 2002; Myers & Rocca, 2001; Wosnitza & Ninniger, 2001). For example, Myers and Rocca (2001) examined how college students' perceptions of instructor argumentativeness and verbal aggressiveness were associated with their perceptions of the classroom climate and their reported levels of state motivation ($n = 236$). Findings from their study suggested that argumentativeness and verbal aggressiveness are two communication behaviors used by college instructors and that use of these behaviors has "important ramifications for student participation in the

classroom” (p. 131). By contrast, Fassinger (1995) found that college professors’ interpersonal style was not directly related to student class participation ($n = 1,059$). In the present study, the category *Other Instructor Attributes* addresses such teacher behaviors (e.g., well-tempered, kind, respectful, speaks to students in a relaxed and welcoming tone). It is interesting to note that less than ten percent of preservice teachers cited features in this category as a positively motivating (8.20%) or a negatively motivating (7.38%) factor. However, other teacher characteristics (e.g., supportiveness, helpfulness, enthusiasm, competence) were more strongly endorsed by the teacher candidates.

According to Moos’s (1979) framework, the *personal growth or goal orientation* dimension includes factors such as task orientation, competition, and achievement. With regard to the present investigation, these factors are encompassed within the categories (a) *Personal Relevance and Interest* and (b) *Confidence and Comfort Level*. Nearly half (49.18%) of the preservice teachers surveyed endorsed personal relevance and interest as positively influencing their level of academic motivation. That is, preservice teachers reported being more positively motivated to actively engage in learning tasks when they felt the subject matter was directly related to their career goals and out-of-school experiences. Over twenty percent (20.49%) reported higher levels of academic motivation when they were confident they could meet course expectations and their own personal achievement goals.

Lastly, according to Moos (1979), factors such as organization, rule setting, rule clarity, and teacher control can also characterize the “personality” of the classroom’s psychosocial environment. These factors form the basis of what he titled the *System*

Maintenance or Change dimension. Obvious correspondence can be seen between this dimension and the categories *Organization and Clarity* and *Shared Control and Critical Voice*. Close to twenty percent (19.67%) of respondents in the present study cited the extent to which learning objectives are made clear, the extent to which students know what is expected of them, and the extent to which classes are well-organized as factors that positively influenced motivation. Over eleven percent (11.48%) of preservice teachers cited the extent to which students are invited to share with the instructor's control of the learning environment and the extent to which student's feel free to voice their own opinions (*Shared Control and Critical Voice*) as motivating factors. Once again, the themes that emerged from the current study confirmed the salience of classroom dimensions that have been identified in the extant literature. Table 31 reflects the areas where findings from the present investigation coincide with Moos's theoretical framework.

Relation of Findings to Extant Literature on Effective Teaching.

The analysis of the findings for the present investigation was also informed by recent literature on effective teaching. The studies by Witcher, Onwuegbuzie, and Minor (2001) and Minor, Onwuegbuzie, Witcher, and James (2002) were particularly instructive. In both instances, the researchers sought to examine preservice teachers' perceptions of characteristics of effective teachers, and to investigate factors that may have influenced their responses. In the first study ($n = 219$), the following six themes emerged as effective teacher characteristics: (a) student-centeredness (79.5%), (b) enthusiasm for teaching (40.2%), (c) ethicalness (38.8%), (d) classroom and behavior management (33.3%), (e) teaching methodology (32.4%), and (f) knowledge of subject

(31.5%). Similar themes emerged in the second study ($n = 134$). These included: (a) student-centered (55.2%), (b) effective classroom and behavior manager (33.6%), (c) competent instructor (33.6%), (d) ethical (29.9%), (d) enthusiastic about teaching (23.9%), (e) knowledgeable about subject (19.4%), and (f) professional (15.7%).

As Table 31 illustrates, the themes that emerged in the extant literature on teacher effectiveness were confirmed in the findings obtained in the current study. Specifically, correspondence was noted with regard to the following categories: (a) *Organization and Clarity*, (b) *Instructional Presentation and Learning Activities*, (c) *Shared Control and Critical Voice*, (d) *Instructor Support and Personalization*, (e) *Instructor Knowledge, Competence, and Enthusiasm*, and (f) *Other Instructor Attributes*. Although not equally endorsed, the findings indicate that six of the eleven emergent themes in the present study are related to teacher effectiveness.

Table 31

Relation of Findings on the Classroom Context to Extant Literature

	TARGET		
	Framework	Moos' Dimensions	Effective Teaching
Present Study		System Maintenance or Change	Effective Classroom & Behavior Manager
Organization & Clarity			
Instructional Presentation & Learning Activities	Task Grouping		Teaching Methodology
Shared Control & Critical Voice	Authority	System Maintenance or Change	Effective Classroom & Behavior Manager
Evaluation Methods	Evaluation		Student-centered
Workload & Timelines	Time		
Instructor Support & Personalization		Relationship	Student-centered
Instructor Knowledge, Competence, & Enthusiasm			Competent Instructor Enthusiasm Knowledgeable
Cooperation & Affiliation		Relationship	
Personal Relevance & Interest		Personal Growth or Goal Orientation	
Confidence & Comfort Level		Personal Growth or Goal Orientation	
Other Instructor Attributes		Relationship	Ethical Professional

Relation of Findings to Extant Literature on Personal Achievement Goals.

In the traditional (dichotomous) framework of goal orientation theory, mastery and performance achievement goals were generally seen as opposite ends of a single continuum. That is, students were thought of as either mastery or performance oriented. In more recent research, a distinction has been made between approach and avoidance forms of performance goals. There has been a growing acceptance of this trichotomous framework among theorists as empirical evidence suggests that performance-approach and performance-avoidance goal orientations have different implications for several learning related outcomes (see Elliot & Harackiewicz, 1996; Elliot & Church, 1997; Harackiewicz, Tauer, Barron & Elliot, 2002, Wolters, 2004). Most recently, a 2 X 2 framework has been proposed whereby a distinction is also made between approach and avoidance forms of mastery goals (see Pintrich, 2000a; Elliot, 1999). Elliot and McGregor (2001) provided some initial findings that supported the revised framework. Finney, Pieper, and Barron (2004) afforded further support of the four distinct factors of goal orientation in a study that was designed to measure personal mastery-approach, mastery-avoidance, performance-approach, and performance avoidance goal orientations at a midlevel of specificity. Confirmatory factor analysis evidenced moderate to high levels of international consistency. The present investigation extends support of the 2 X 2 framework in that it utilized the instrument already validated by Finney, et al.

There is increasing empirical evidence to suggest that individuals do in fact adopt multiple patterns of goals (see Harackiewicz et al., 1997; Barron & Harackiewicz, 2001; Barron & Harackiewicz, 2003; Pintrich, 2000b). Barron and Harackiewicz (2001) have argued that there are four ways (i.e. additive, interactive, specialized, selective) in which

mastery and performance-approach goals can combine to promote optimal motivation. By contrast, Wolters (2004) found little evidence to indicate that mastery and performance-approach goals have concomitant adaptive relations. The present investigation did not attempt to examine the predictive relationship between personally adopted achievement goals and various learning related outcomes. Nor did it propose to evaluate the adaptive or maladaptive nature of specific multiple goal patterns. However, the findings do support the multiple goals perspective in so much as individual student profiles reflected endorsement of more than one goal measure in many instances.

Relation of Findings to Extant Literature on Personal Goals and Context.

Within the fields of education and educational psychology, there has been an increased focus on the relational nature of learning. The growing body of empirical evidence suggests that a student's actions in a classroom are jointly affected by personal characteristics and contextual factors (see Marton & Saljo, 1997; Ramsden, 1992; Prosser & Trigwell, 1999; Jarvela, 2001; Boekaerts, 2001; Lemos, 2001; Volet, 2001a; Karabenick, 2004; Barron & Harackiewicz, 2001, 2003; Senko & Harackiewicz, 2005). Goal orientation theorists have directed some of their attention to exploring the mediating and moderating effects of personal achievement goals in relation to classroom goal structures. Some findings have suggested that there is a positive relation between the goal structure students perceive as emphasized in the classroom and their adoption of the analogous goal orientation (Wolters, 2004). By contrast, other theorists have suggested the possibility that students may continue to espouse a goal orientation that is not supported by the classroom goal structure (see Linnenbrink, 2004; Linnenbrink & Pintrich, 2001; Barron & Harackiewicz, 2001). Still others suggest that students' goal

orientations actually *influence their perceptions* of the classroom goal structure (Linnenbrink, 2004).

In a similar vein, the research efforts of many educational psychologists and motivation theorists have been directed toward understanding and describing how students' motivational beliefs interact with cues present in the educational environment. A core assumption of some of these investigations is that "students with different motivational tendencies view classroom events and situations in somewhat different ways" (Jarvela & Niemivirta, 2001, p. 118). Building on that line of thinking, the current investigation sought to examine whether there was a relationship between students' personally adopted achievement goals and the features of the classroom environment they distinguished as optimally motivating. The findings indicated that, with two exceptions, there was no significant relationship between the achievement goals teacher candidates adopted and their perspectives about the motivating features of the classroom learning environment. That is, the variables (a) goal orientation and (b) thematic endorsement appear to be independent. These findings somewhat contradict what has been set forth in the extant literature. Two factors might account for this disparity. First, whereas previous empirical evidence has emerged from studies conducted in more context specific situations, the present study examined students' achievement goals and their perspectives on the classroom context at a midlevel of specificity. That is, in responding to the survey questions, participants were asked to reflect across all of the on-campus classes they were taking during the semester. Operationalizing goal orientation measures and perspectives about the classroom learning

environment at the midlevel of specificity may explain the lack of association between these variables.

Second, the fact that the sample members were exclusively preservice teachers may have contributed to the lack of association between goal orientation and thematic endorsement. By the very nature of their teacher preparation, preservice teachers have a heightened awareness of instructional practices and classroom management techniques that can enhance or impede student learning and motivation. This might account for the fact that, as a group, the teacher candidates endorsed certain classroom features as optimally motivating, irrespective of their personally adopted achievement goals.

Interestingly, a significant relationship between achievement goals and theme endorsement was found in two instances: (a) respondents with higher versus lower MAP goals and their endorsement of the category titled *Personal Relevance and Interest* and (b) respondents with higher versus lower MAV goals and their endorsement of the category titled *Personal Relevance and Interest*. Examination of the raw frequencies indicates that the proportion of preservice teachers with lower MAP scores who endorsed this category of classroom features was 60 percent, whereas the proportion of preservice teachers with higher MAP scores who endorsed this category was 41 percent. The proportion of preservice teachers with lower MAV scores who endorsed this category of classroom features was 58 percent, whereas the proportion of preservice teachers with higher MAV scores who endorsed this category of classroom features was 40 percent. The findings suggest that teacher candidates with higher MAP and MAV scores are less likely to endorse *Personal Relevance and Interest* as motivating features of the classroom context than teacher candidates with lower MAP and MAV scores.

The phi coefficient was computed to examine the strength of the relationship (shared variance) in each case. With regard to the MAP X Theme relationship, the phi coefficient of 0.02 indicates that there is a negligible association between the variables. The phi value also indicates that approximately two percent of the endorsement of the theme can be explained by goal orientation. Alternatively, phi indicates there are one or more variables still undetected that account for 98 percent of the thematic endorsement. Similarly, for the MAV X Theme relationship, the phi coefficient of 0.02 indicates that there is a negligible association between the variables. The phi value also suggests that two percent of the endorsement of the theme can be explained by goal orientation. On the other hand, phi indicates there are one or more variables still undetected that account for 98 percent of the thematic endorsement. It should be stressed that these were the only two instances in which an association between goal orientation and thematic endorsement was evidenced. This suggests that these serendipitous findings warrant further investigation.

Implications for Teaching and Learning in Higher Education

Despite its limitations, this study contributes to the empirical knowledge concerning how the context in which learning takes place can motivate students to learn and behave in different ways. The fact that teacher candidates expressed perspectives on the features of optimally motivating classrooms that fell into as many as eleven categories highlights the complexities of the classroom learning environment. In addition, the range of student responses suggests that both the academic and the social context of the learning environment have an important role in promoting and supporting student motivation. College instructors need to be cognizant of the obvious, as well as

the more subtle but important aspects of classroom life. Moreover, the fact that, irrespective of personally endorsed achievement goals, teacher candidates identified specific classroom features as optimally motivating reinforces the salience of these contextual elements.

In 1987, Chickering and Gamson offered the “Seven Principles for Good Practice in Undergraduate Education.” These principles provide the building blocks upon which effective teaching and learning practices can be established. According to Chickering and Gamson (1987), good practice in undergraduate education accomplishes the following: (1) encourages contact between students and faculty; (2) develops reciprocity and cooperation among students; (3) encourages active learning; (4) gives prompt feedback; (5) emphasizes time on task; (6) communicates high expectations, and (7) respects diverse talents and ways of learning. The clusters of classroom features that emerged from this present investigation confirmed that several of the principles set forth by Chickering and Gamson are also important to college students. There is evidence to suggest, however, that college students and instructors often have different subjective perspectives about the messages conveyed in the real contextual environment (Lemos, 2001; Urdan, 2001). Findings from this study may encourage future dialogue between students and instructors, whereby students view the classroom from the perspective of their instructors, and instructors view the classroom from the perspective of their students (Pollio & Beck, 2000). Such conversations could enhance our understanding of learning and teaching in higher education and bring us a step closer in our efforts to craft classroom learning environments that motivate and engage all students.

Recommendations for Future Research

Although this study yielded many findings pertinent to teaching and learning at the postsecondary level, there are several recommendations that should be considered for future research. This section will discuss those recommendations, in light of the study's limitations. Should the study be replicated, the following recommendations would add to the transferability of the findings:

1. The relatively small sample size ($n = 122$) is an acknowledged limitation of the study. Should the study be replicated, a larger sample size would add to the richness of the qualitative information and serve to confirm or negate the themes that emerged.
2. The relative homogeneity of the sample also limits the transferability of the findings. By and large, the sample members were of traditional college age (95.1%), female (91.7%), and White (83.5%). The study should be replicated with a sample that is more heterogeneous with respect to age, gender, and race/ethnicity.
3. Sample members were recruited from one private, Catholic university located on the East Coast. Findings would be enhanced if the study were to be replicated at institutions that vary in Carnegie Classification characteristics and geographic location.
4. The fact that the sample was purposively delimited to preservice teachers also limits the transferability of the findings. As acknowledged in Chapter III, preservice teachers have the opportunity to focus on many dimensions of the classroom learning environment as part of their teacher preparation. They

examine methods of effective instruction; preview materials, technology, and other equipment to enhance the teaching and learning process; and explore various grouping strategies that facilitate teacher-student and student-student interactions. In addition, preservice teachers engage in various activities throughout their teacher training that encourage them to reflect on themselves as learners. As such, this population provided an information-rich set of cases that might be less than typical. Further studies should move beyond this population of undergraduates.

5. There has been a growing recognition of differences among academic disciplines with respect to the structure of knowledge; patterns of teaching and learning; the culture and environment in which teaching and learning take place; and student and faculty attitudes, beliefs, values, and orientations toward instruction (Hativa & Marincovich, 1995). The present study does not consider the influence of academic discipline on (a) students' dispositional orientations, (b) classroom contexts, or (c) students' perspectives on, and perceptions of, those contexts. As such, future studies might explore the relationships among various academic disciplines, students' personally endorsed achievement goals, and their perspectives on classroom contexts.
6. Finally, this study employed an inductive approach to the identification and exploration of students' perspectives about the motivating features of the classroom learning environment. The study would be enhanced, however, by holding follow-up individual and/or small group interviews with students so that responses that were particularly detailed, insightful, or unusual could be

explored further. These interpretive measures could be supplemented by classroom observations as a means of triangulating the data. Furthermore, conducting follow-up interviews with students regarding their responses to the 12 likert-type items would bring additional clarity to the findings and deepen the insights gained.

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APPENDICES

Appendix A

Items on the *Attitude Toward Learning and Performance in College
This Semester* Questionnaire

1. My goal this semester is to get better grades than most of the other students.
2. It is important for me to do well compared to other students this semester.
3. I want to do better than other students this semester.
4. I just want to avoid doing poorly compared to other students this semester.
5. The fear of performing poorly is what motivates me.
6. My goal this semester is to avoid performing poorly compared to other students.
7. I am afraid that I may not understand the content of my courses as thoroughly as I'd like.
8. I worry that I may not learn all that I possibly could this semester.
9. I am definitely concerned that I may not learn all that I can this semester.
10. Completely mastering the material in my courses is important to me this semester.
11. I want to learn as much as possible this semester.
12. The most important thing for me this semester is to understand the content in my courses as thoroughly as possible.

Note: Performance-approach= Items 1 through 3; Performance-avoidance= Items 4 through 6; Mastery-avoidance = Items 7 through 9; Mastery-approach = Items 10 through 12.

Source: Finney, S., Pieper, S., & Barron, K. (2004). Examining the psychometric properties of the achievement goal questionnaire in a general academic context. *Educational and Psychological Measurement*, 64(2), 365-382.

Appendix B

Factor Structure of the Personal Achievement Goal Items:
Undergraduate Survey of Classroom Features & Student Motivation

definitely enjoying me.				
Completely mastering the material in my courses is important to me this semester.				138
I want to learn as much as possible this semester.	Factor 1	Factor 2	Factor 3	Factor 4
The most important thing for me this semester is to understand the content in my courses as thoroughly as possible.	PAP X	PAV	MAV	MAP

My goal this semester is to get better grades than most of the other students.

X

It is important for me to do well compared to other students this semester.

X

I want to do better than other students this semester.

X

I just want to avoid doing poorly compared to other students this semester.

X

The fear of performing poorly compared to other student is what motivates me.

X

My goal this semester is to avoid performing poorly compared to other students.

X

I am afraid that I may not understand the content of my courses as thoroughly as I'd like.

X

I worry that I may not learn all that I possible could this semester.

X

Not learning all that I can this semester is something that definitely concerns me.

X

Completely mastering the material in my courses is important to me this semester.

X

I want to learn as much as possible this semester.

X

The most important thing for me this semester is to understand the content in my courses as thoroughly as possible.

X

Note: PAP= Performance-Approach; PAV= Performance-Avoidance; MAV = Mastery-Avoidance; MAP = Mastery-Approach.

Appendix C

Survey Instrument Used in This Study

UNDERGRADUATE SURVEY OF CLASSROOM FEATURES & STUDENT MOTIVATION

PART I – PERSONAL ACHIEVEMENT GOALS

Directions: Below is a series of statements that describe various purposes or goals individuals have for engaging in academic work. On a scale of 1(*not at all true of me*) to 7 (*very true of me*), please indicate the extent to which you believe each statement describes your own purposes or goals for engaging in academic work in your college classes this semester. Circle one choice for each statement.

1. My goal this semester is to get better grades than most of the other students.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME						VERY TRUE OF ME

2. I just want to avoid doing poorly compared to other students this semester.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME						VERY TRUE OF ME

3. Completely mastering the material in my courses is important to me this semester.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME						VERY TRUE OF ME

4. I am afraid that I may not understand the content of my courses as thoroughly as I'd like.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME						VERY TRUE OF ME

5. It is important for me to do well compared to other students this semester.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME						VERY TRUE OF ME

Continued on next page.

6. I want to learn as much as possible this semester.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

7. The fear of performing poorly compared to other students is what motivates me.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

8. The most important thing for me this semester is to understand the content in my courses as thoroughly as possible.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

9. I worry that I may not learn all that I possibly could this semester.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

10. I want to do better than other students this semester.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

11. Not learning all that I can this semester is something that definitely concerns me.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

12. My goal this semester is to avoid performing poorly compared to other students.

1	2	3	4	5	6	7
NOT AT ALL						VERY TRUE
TRUE OF ME						OF ME

Adapted from Finney, Pieper, & Barron (2004)

Continued on the next page.

PART II: CLASSROOM FEATURES

The next set of questions focuses more specifically on the classroom learning environment. You will be asked to describe the features of your college classes that you feel have the greatest influence on your level of academic motivation. Classroom features include, but are not limited to: teaching methods, design of learning activities and assignments, evaluation practices, teacher-student interactions, and student-student interactions.

Directions: Think about the on-campus classes you are taking **this semester**. Then, in the spaces provided, describe the classroom features (3-4) that you feel have the **greatest positive influence** on your level of academic motivation.

I am most motivated when... *Continued on the next page.*

I am most motivated when...

I am most motivated when...

I am most motivated when...

Continued on the next page.

Directions: Once again, think about the on-campus classes you are taking **this semester**. Now, in the spaces provided, identify the classroom features (2-3) that you feel have the **greatest negative influence** on your level of academic motivation.

I am least motivated when...

I am least motivated when...

I am least motivated when...

Continued on the next page.

PART III: STUDENT INFORMATION

Directions: Please indicate your responses to the following demographic information by checking the box next to the correct answer.

1. Age:

☐ 18-23

☐ 24 and above

2. Gender:

☐ Male

☐ Female

3. Racial/Ethnic Identification:

☐ American Indian or other Native American

☐ Asian, Asian American, or Pacific Islander

☐ Black or African American

☐ Hispanic or Latino

☐ White (non-Hispanic)

☐ Other

Continued on the next page.

- | | | |
|--|---|--|
| 4. Current Classification | 5. Major | 6. Part-time/Full-time Status |
| <input type="checkbox"/> Freshman/first-year | <input type="checkbox"/> Elementary Education | <input type="checkbox"/> Part-time student this semester |
| <input type="checkbox"/> Sophomore | <input type="checkbox"/> Elementary/
Special Education | <input type="checkbox"/> Full-time student this semester |
| <input type="checkbox"/> Junior | <input type="checkbox"/> Special Education/
Speech-Lang. Pathology | |
| <input type="checkbox"/> Senior | <input type="checkbox"/> Secondary Education | |

Thank you for your time and cooperation.